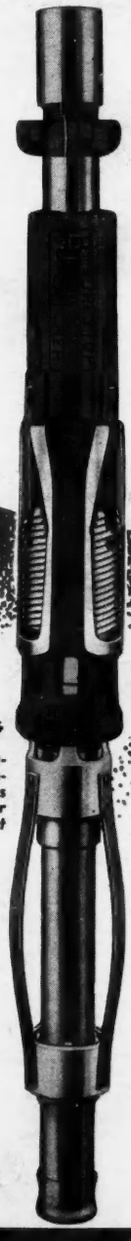
for Safe ECONOMY speed and efficiency..

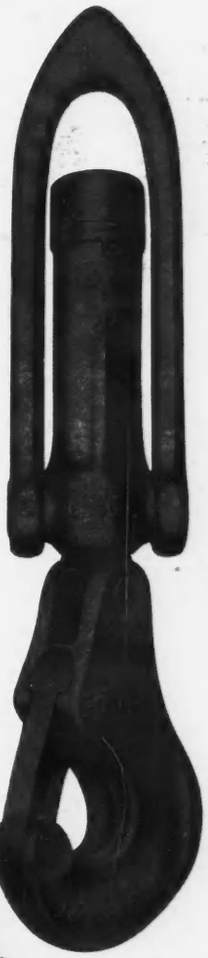
USE THESE BJ TOOLS

In these modern BJ Production Tools you see the highest expression of true economy . . . money saving through long service, speed and efficiency in operation and SAFETY, as proved by world-wide use.

Worn, out-of-date equipment may fail without warning, causing serious injury to your men or costly damage to your well... Replace the "cripples" among your equipment now with these new, SAFE, economical BJ Production Tools. You will find they give the skill of your pulling crews a new time-saving effectiveness. See the complete line of BJ Production Tools at your Supply Store, refer to our section in the Composite Catalog, or write us for bulletins and prices.



STOP TUBING CATCHER
tubing breath- increases pro- . . . Protects dropped or tubing without to casing.



BJ "50" TUBING HOOK
Safe for 50 ton tubing loads. . . . Made with "locking arm" and enclosed relief spring. Available also with 75 ton tubing capacity.

BJ "20" SPRING ROD HOOK
Safe for 20 ton strings of rods. . . Made also with ball bearing and locking arm (without the spring) for 10 and 15 ton loads.

BJ ROD ELEVATOR
equipped with front and rear operating latches. - Made in light and heavy types for ⅝" to 1" rods.

BJ OPEN END TUBING TONG
Light weight, properly balanced, ratchets perfectly. - Stays on tubing until released by operator.

BJ PRODUCTION TOOLS

BYRON JACKSON CO.
AND SUBSIDIARY
FORT WORTH • LOS ANGELES • NEW YORK

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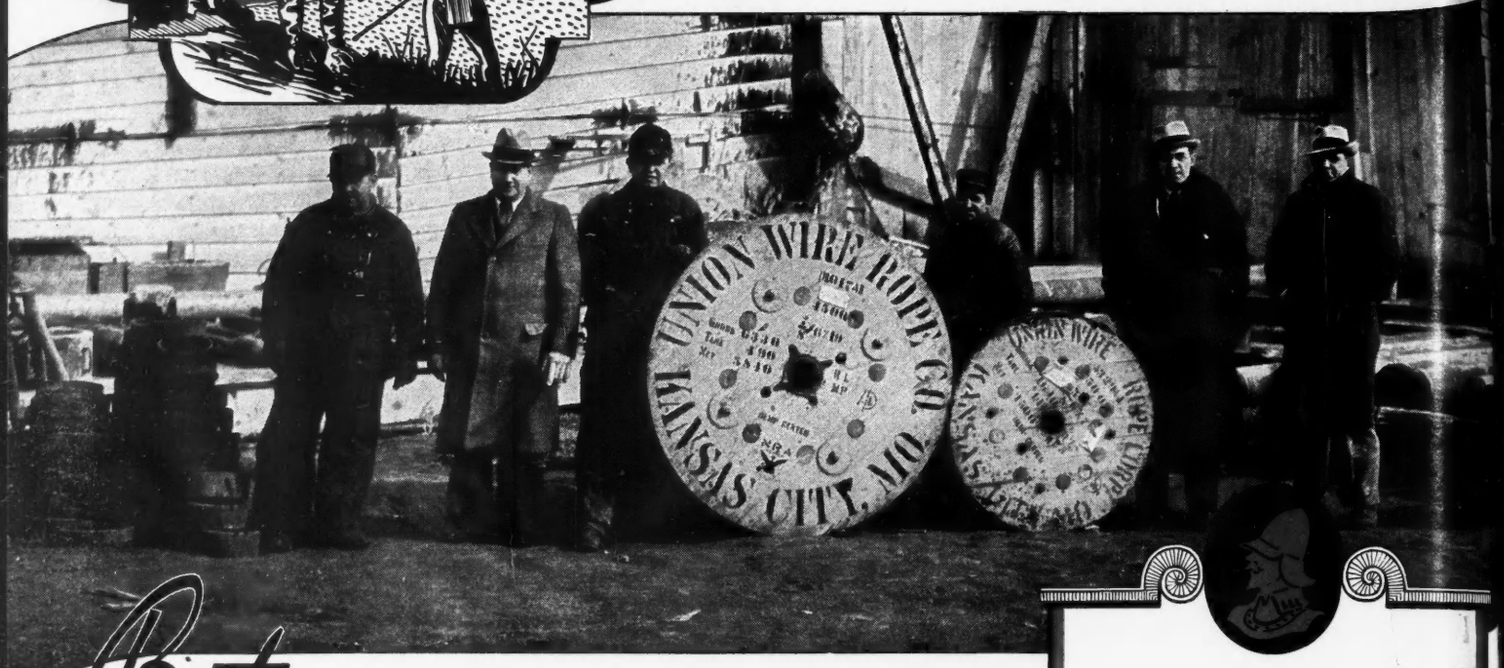
CORONADO *found no* gold in KANSAS



But UNION WIRE LINES *find "gold" there now!*

Historical research proves that Coronado and his band of 36 Spanish adventurers explored Kansas only 49 years after Columbus discovered America and 44 years before Raleigh planted the first white settlement in America at Roanoke, Virginia. After failing in his search for gold, Coronado returned to Mexico feeling that his daring and difficult expedition had been fruitless.

But in this same region where Coronado found no gold, UNION Wire Lines today are finding "black gold" in plenty. It is an interesting coincidence that Coronado brought his search for treasure to an end at the Indian city of Quivira in what is now Rice County, and that oil interest in Kansas is focused on Rice County at this time. Throughout the oil fields of this very active oil state, UNION Wire Lines have become leaders and favorites because of their exceptional durability.

The photograph shows the Equity Gas Company's "Cora Shaffer Well No. 1," being drilled with UNION Lines near Bunker Hill, Russell County, Kansas. The men, left to right, are: J. A. Saling, farm boss; Jess Hunt, Jarecki Mfg. Co.; Grit Burke, driller; Harry Kessler, tool pusher; H. M. Humphrey and H. E. Frye, Union Wire Rope Corp.

DESCRIBED KANSAS AS "LAND OF PLENTY"

Though Coronado failed to find Quivira a "city of gold," and though he abandoned there his search for golden cities, he reported Kansas a "land of plenty," writing to the King of Spain:

"The country is the best I have ever seen for producing all the products of Spain, for, besides the land itself being very fat and black, and being well watered. . . . I found plums like those of Spain, and nuts and very good sweet grapes, mulberries, elderberries, succulent buffalo beans, sheep sorrel, ground cherries, wild onions, Indian turnips, walnuts and pecans." He found the Quivirans growing crops of corn, beans, melons, squashes and pumpkins."

Coronado brought into Kansas the first horses the Indians had ever seen.

UNION WIRE ROPE CORPORATION

Executive and Sales Offices: 601 Beacon Life Bldg., Tulsa, Okla.
Factory and General Office: Kansas City Mo. Branch: Portland, Ore. Warehouse: Monahans, Texas

In Mexico: E. O. CHAPA, P. O. Box 604, Tampico, Tamps, Mexico. Stocks at Tampico

JARECKI MFG. CO.
Distributors: Midcontinent, New Mexico and Eastern Oil Fields

MARION MACHINE FOUNDRY & SUPPLY CO., Rocky Mountain Fields, except New Mexico

Export Agents: (except Mexico) LUCEY EXPORT CORP., Woolworth Bldg., New York; Broad St. House, London

UNION WIRE LINES

The "ULTIMATE LOW COST WIRE ROPE"

If you really knew . . . .

How safe—how practical—how completely dependable the BAKER ROTARY WALL SCRAPER is, you would take advantage of the exclusive profit-making work it will perform

It scrapes rotary mud from the face of the oil sand, and enlarges the area to secure maximum production.

It enlarges the diameter for setting larger sizes of casing or liners, and eliminates possibility of "tight" holes.

It scrapes a wide, flat shoulder as the first step in bringing a crooked hole back to vertical.

It enlarges the bottom 20 to 40 feet of hole to insure complete distribution and a better bond of cement around the shoe.

It reams out old cement and makes it possible to secure bottom water shut-off when re-cementing.

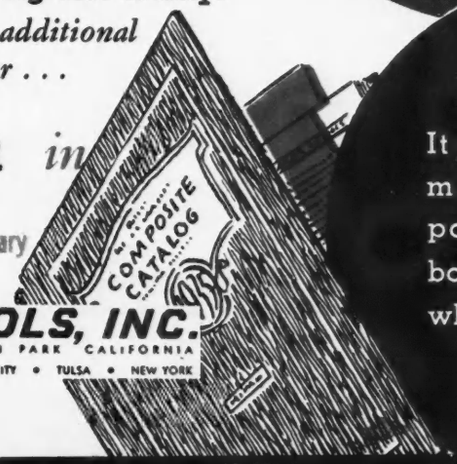
AND blades always open by pump pressure at exactly the desired point, and they always close when coming out of the hole.

You can cut to any specified ¼" diameter up to the capacity of the tool in use. For example, a No. 6 Baker Wall Scraper runs in through 9⅝" casing and reams any desired diameter from 9¼" to 19".

So, we repeat, if you really knew how the Baker Wall Scraper can make your operations both safer and more profitable, you would no doubt be using one today.

Why not write for additional information, or . . .

look for **BAKER** *in*



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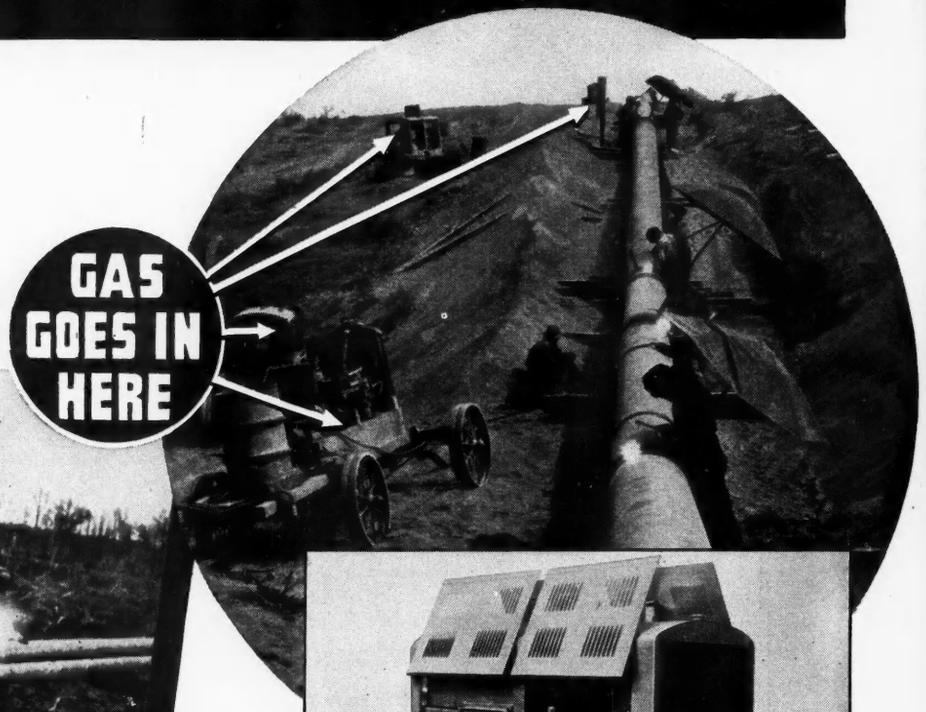
BAKER OIL TOOLS, INC.

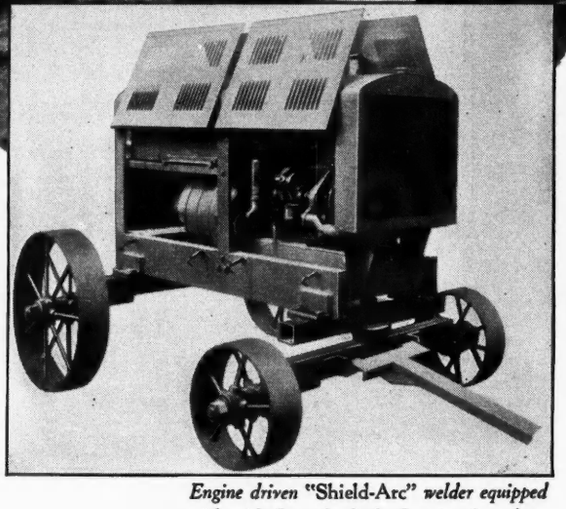
POST OFFICE BOX 609 HUNTINGTON PARK CALIFORNIA

COALINGA • TAFT • HOUSTON • OKLAHOMA CITY • TULSA • NEW YORK

GASOLINE and OIL do the welding here

BELOW—*An 8-inch natural gas line and a 6-inch crude oil line, recently completed between the Tepetate field and Lake Charles, La., for Continental Oil Co. Welding done by H. C. Price, Inc., Bartlesville, Okla., using Lincoln "Shield-Arc" welders and "Fleetweld" electrodes. General Contractors, Apex Construction Co., Houston, Tex.*





Engine driven "Shield-Arc" welder equipped with wide-flanged wheels for pipe line duty.

The electric arc employs the products of your industry and produces a weld that costs less and lasts longer. Specify *your* products for the construction of *your* pipe lines!

For proof of the superiority of welds made with the shielded arc, mail the coupon below. THE LINCOLN ELECTRIC CO., Dept. L-268, Cleveland, Ohio. Largest Manufacturers of Arc Welding Equipment in the World.

"SHIELD-ARC"
THE ONLY *complete* WELDER

THE LINCOLN ELECTRIC CO.
Dept. L-268, Cleveland, Ohio

Please send me a free copy of "The Shielded Arc" which gives proof of the permanence of "*Shield-Arc*" welds.

Firm _____

Name _____

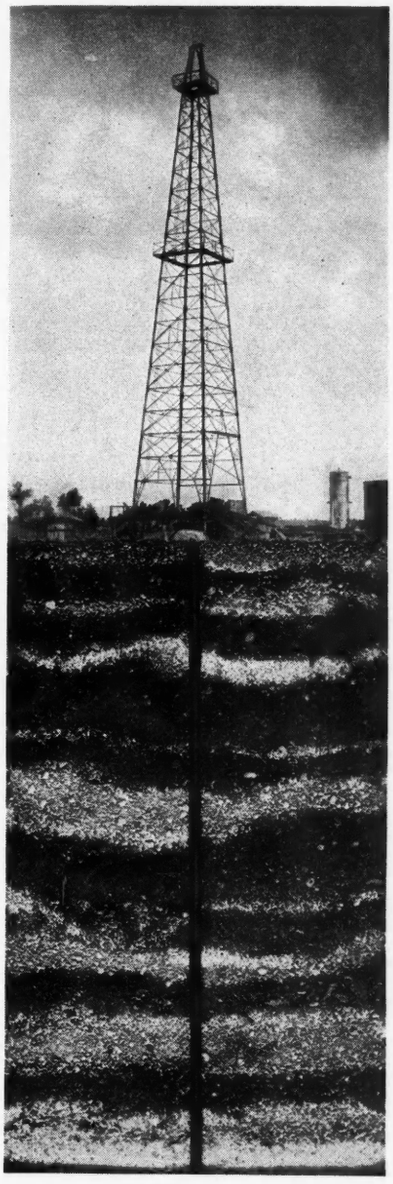
Position _____

Address _____

City _____

State _____

The DEEPER you go, the more you need COGLUBE for rock bits!



Continental Ortego No. 1, discovery well, Tepetate field, Acadia Parish, Louisiana, 8,313 feet.

When you are down to six or eight thousand feet, flat cones and pins on your rock bit mean a lot of time and money gone up the creek. Guard against it with COGLUBE, the lubricant we developed especially for rock bits, open gears and other tough lubricating jobs. It is a gear shield unaffected by the washing action of water. Unlike most gear-shield compounds, it is also a high-quality lubricant. COGLUBE's tough, tightly adhering lubricating film resists rupture from shock load and sliding action and prevents galling under the severest conditions. Use Conoco COGLUBE in rock bits. It may save you a trip a day. Write to Dept. 18, Ponca City, Okla., for our new book on applying oil field lubricants.

CONOCO OIL FIELD LUBRICANTS

CONTINENTAL OIL COMPANY - Est. 1875

CONOCO OIL FIELD LUBRICANTS IN STOCK AT THESE POINTS:

CALIFORNIA
Los Angeles

COLORADO
Craig
Denver
Ft. Collins
Ft. Morgan
Pueblo

KANSAS
Arkansas City
Chanute
Eldorado
Herington
Hutchinson
Independence

KENTUCKY
Owensboro

LOUISIANA
Lake Charles

MONTANA
Billings
Cut Bank
Great Falls
Lewistown
Shelby
Winnett

NEW MEXICO
Artesia
Farmington
Gallup
Hobbs

OKLAHOMA
Ada
Altus
Ardmore
Bartlesville
Chickasha
Duncan
Edmond
Enid
Guthrie
Muskogee
Oklahoma City
Okmulgee
Ponca City
Seminole
Tulsa

TEXAS
Amarillo
Beaumont
Big Spring
Borger
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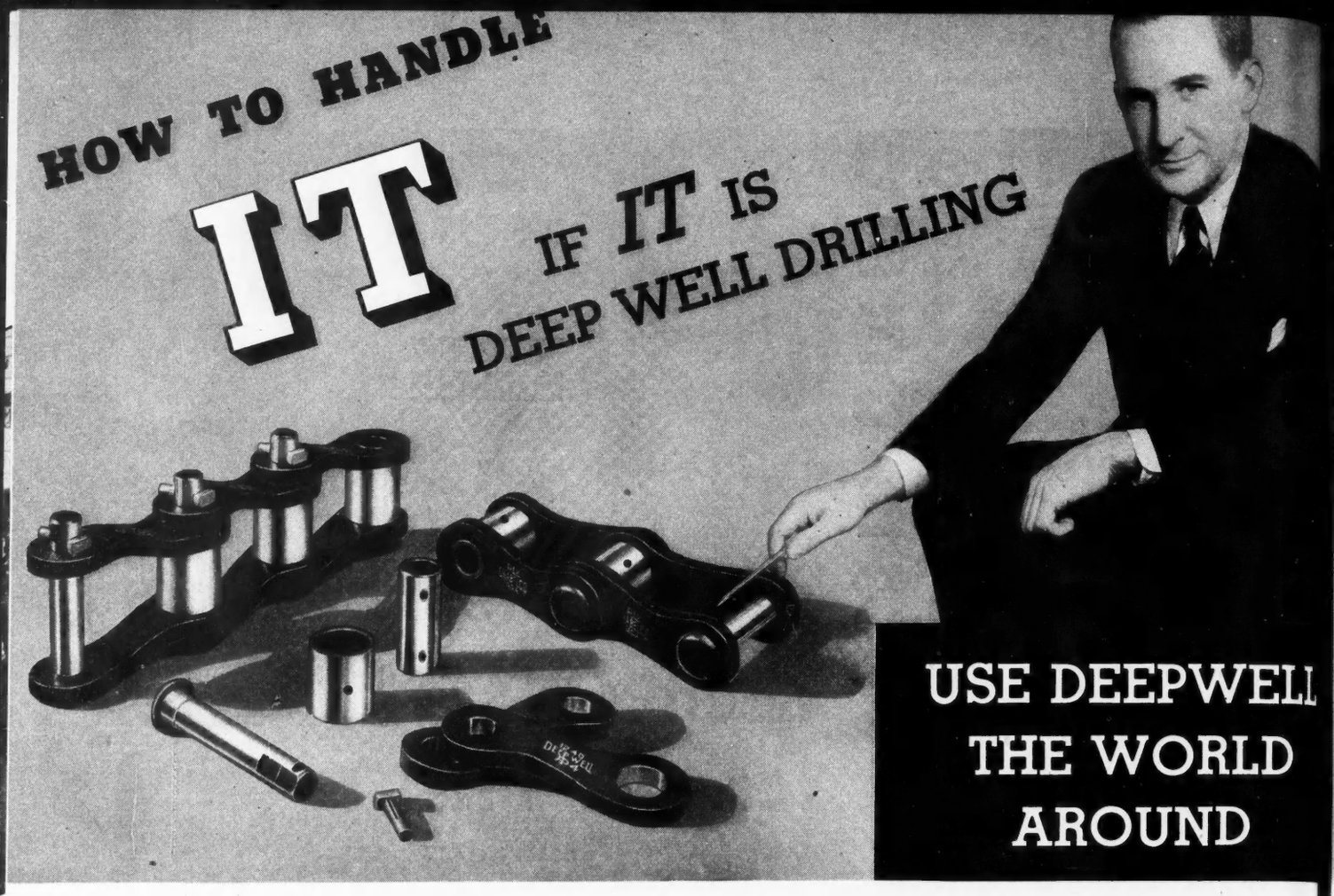
Fort Worth
Galveston
Houston
Longview
Marshall
McCamey
Mexia
Midland
Mineral Wells
Pampa
San Antonio
Tyler
Wichita Falls

WYOMING
Casper
Glenrock
Greybull
Lovell
Lusk
Medicine Bow
Rawlins
Thermopolis
Worland



● Rex Deepwell Chabelco is driving rotaries the world around. In the toughest drilling of the California rocks, in the deep wells of the Gulf Coast, in Venezuela, Colombia, Iraq, Burma, Roumania, in all types of drilling, easy or hard, Rex Deepwell is driving wells at lower cost per foot of hole.

Rex Deepwell takes up the shock loads and the high speeds of modern drilling with 9, 10, even 13 lines on the block. It meets the strenuous modern tests for strength, lasting qualities and economy.

Fine finish, high strength, and the new Rex method of lubricating the pins make Rex Deepwell the lowest-cost chain per foot of hole for high-speed drilling.

Insist on Deepwell for both easy and hard drilling.

Rex Deepwell DW-3—DW-4.

CHAIN BELT COMPANY
1639 West Bruce St., Milwaukee, Wis.

DISTRIBUTORS

MID-CONTINENT AND GULF COAST DISTRIBUTORS

Frick-Reid Supply Corporation
Lucey Products Corporation — Murray-Brooks Hardware Company, Ltd.
Norvell-Wilder Supply Company — Rex Supply Company — Coastal Supply Corp.
Industrial Supply Co., Inc. — Dunigan Tool and Supply Company

CALIFORNIA DISTRIBUTORS

The Republic Supply Co. of California

EXPORT

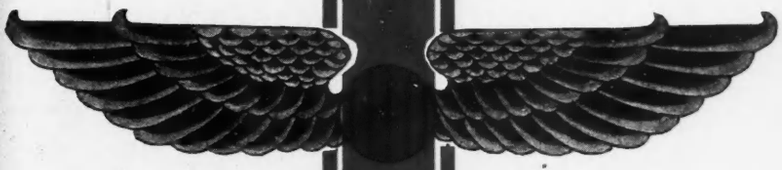
Chain Belt Company, Chrysler Building, New York
Lucey Export Corporation, Woolworth Building, New York
William E. Knight, 2-3 Norfolk St., Strand, London, W. C. 2, England

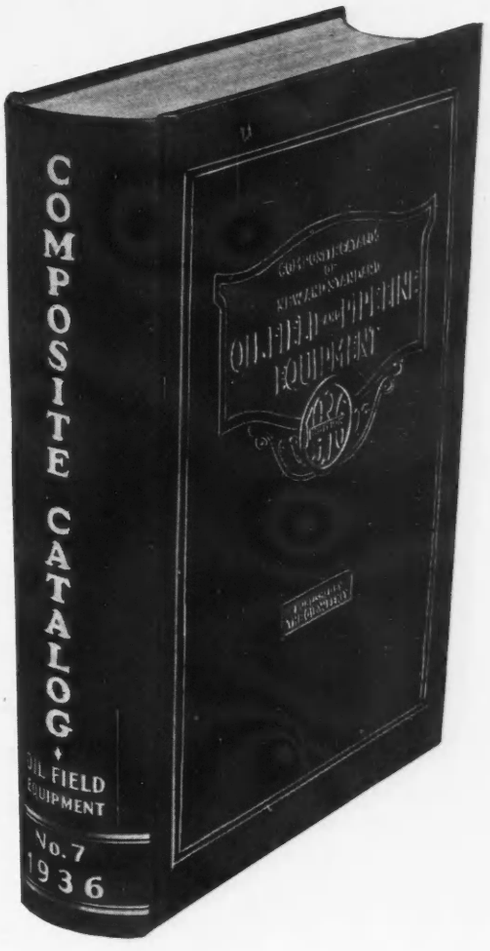
CHAIN BELT COMPANY
OF MILWAUKEE

REX

Deepwell Chabelco

REX DEEPWELL DW-3 DW-4 • REX CHABELCO 1033 12





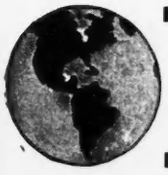
See McEVOY

OIL FIELD EQUIPMENT SECTION

Pages 907-926

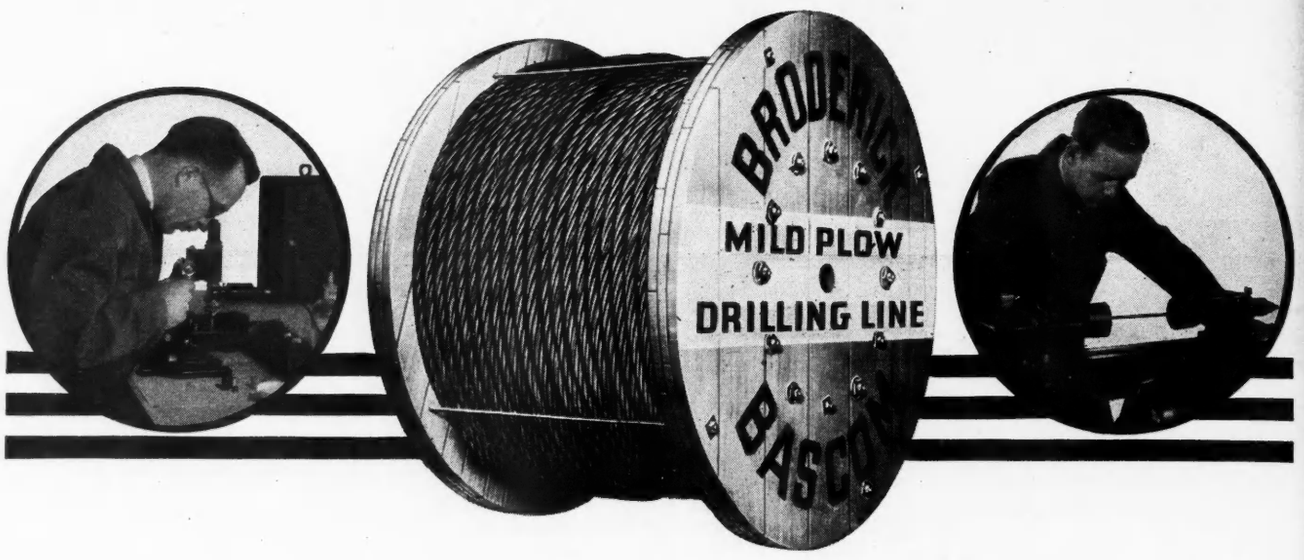
COMPOSITE CATALOG

With Prices



J. H. McEVOY & COMPANY

Established 1906 — HOUSTON, TEXAS, U. S. A. — Incorporated 1925



It MUST Be Good To Pass These WIRE CENSORS

Only the best wire is good enough for Broderick & Bascom Mild Plow Steel Drilling lines.

And only the best wire gets in, because only after passing the most rigid tests under the watchful eyes of our engineers, is wire rated high enough for such important use.

60 years making nothing but wire cable has taught us how to take this super-wire, and twist it into drilling lines that give remarkable service and economy in cable tool drilling.

Let your next be a Broderick & Bascom Mild Plow Steel Line.

BRODERICK & BASCOM ROPE CO.
St. Louis

Factories: St. Louis and Seattle

Broderick & Bascom Mild Plow Drilling Line

T-13 R1

The Continental Supply Co.

Mid-Continent and Rocky Mountain Distributors

Murray-Brooks Hardware Co.

South Louisiana Distributors

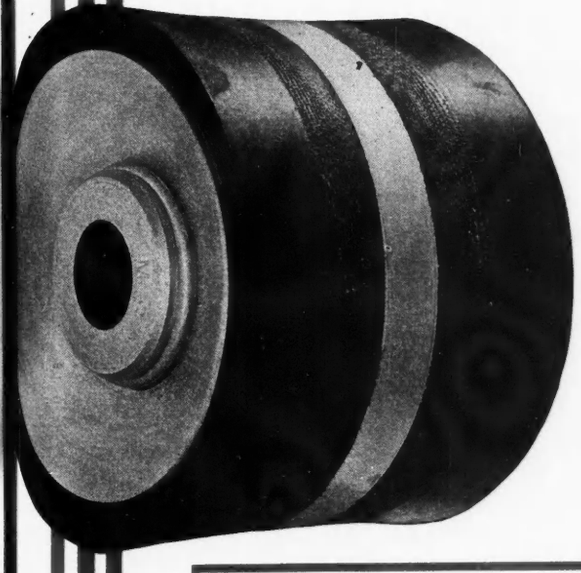
★ IMPROVED MISSION SLUSH ★ PUMP PISTON

CUTS UPKEEP COSTS IN HALF

REPLACEABLE *Rubbers* ON A PERMANENT BODY

★ SAVES MONEY

formerly invested in continually buying new bodies.



★ LIFE OF LINERS AND PISTONS INCREASED

Principle of more rubber and less metal gives three-times-greater wiping surface, eliminating by-passing.

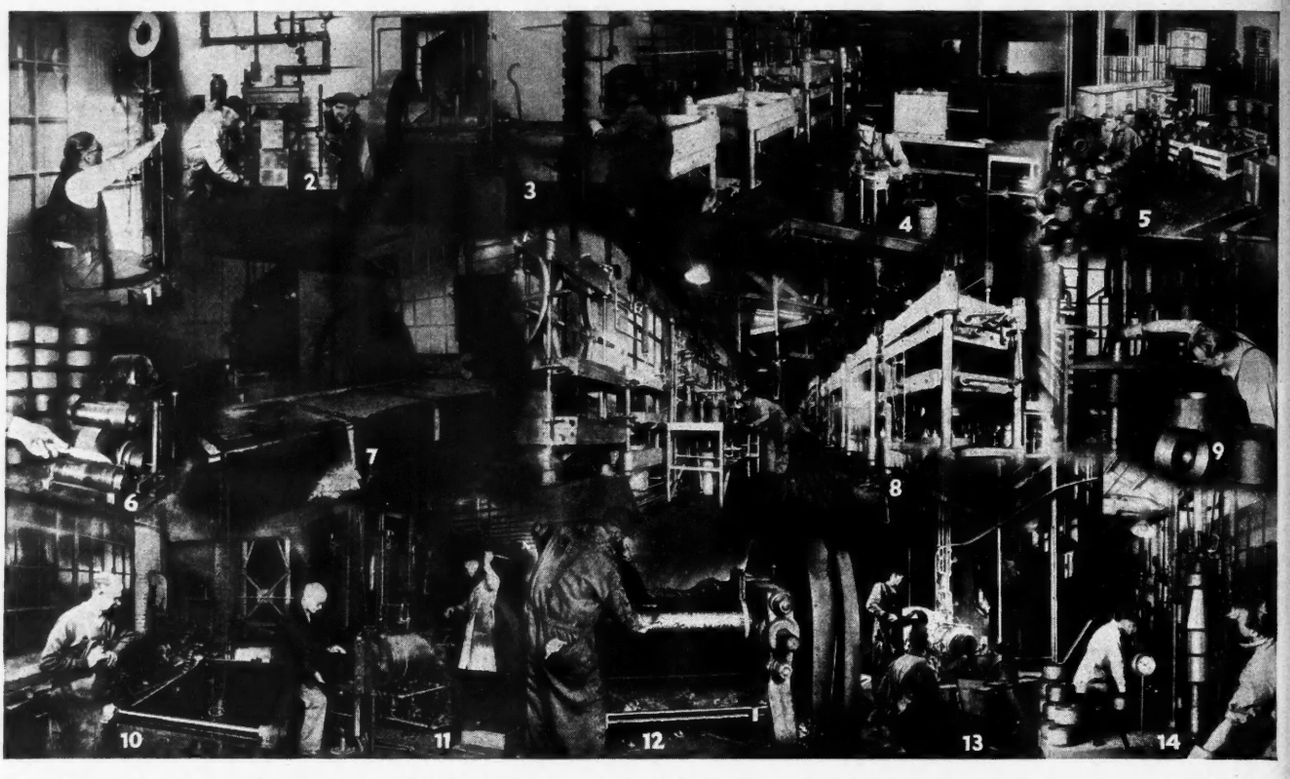
SAVING MONEY FOR SUCCESSFUL OPERATORS THE WORLD OVER

SOLD THROUGH SUPPLY STORES EVERYWHERE

MISSION MANUFACTURING CO.

HUMBLE ROAD - - - - - - - - - - HOUSTON, TEXAS

MISSION SLIPS . . . MISSION VALVES . . . MISSION PISTONS . . . MISSION SWABS



1. Testing rubber for tensile strength. 2. Preliminary cure test. 3. Tubing seamless Protector slugs. 4. Loading and unloading compression moulds. 5. Testing finished Protectors. 6. Trimming excess stock. 7. Dusting stock preparatory to sampling. 8. Battery of presses in curing department. 9. Removing cores after curing. 10. Applying weatherproof coating. 11. Tubing stabilizer stock. 12. Masticating initial mix. 13. Checking weight of slugs. 14. Final expansion test, duplicating field operation.

"THEY'VE MADE THEIR WAY BY THE WAY THEY'RE MADE"

The above photo shows several phases of production in the Patterson-Ballagh Protector plant. It is the only plant in the world devoted exclusively to the production of rubber for pipe and casing protectors. Processes have been highly developed to insure the toughest, strongest, most enduring rubber for this severe service. Every batch of rubber is painstakingly tested. The rubber must meet a breaking strain of nearly 5,000 lbs. to the square inch and an elongation of approximately 800%. Patterson-Ballagh Protectors are the product of eight years' specialized development. We have prepared interesting literature giving pertinent facts about the manufacture of casing protectors. This will be sent upon request.

PATTERSON - BALLAGH

All-Rubber **PROTECTORS** *The Genuine*

PATTERSON - BALLAGH CORPORATION

Plant and General Offices: 1900 East Sixty-fifth Street, Los Angeles, Calif., U. S. A. • New York Office: 39 Cortlandt Street
Oklahoma Office: Oklahoma City, 438 N. W. Twenty-sixth Street • Texas Office: Houston, 515 M. & M. Building

KEROTEST

VALVES • FITTINGS

The frightful toll of fire in an oil field is invariably the result of faulty or inferior equipment. Guard against this contingency with Kerotest Valves and Fittings—built, designed and tested to meet each and every field condition so that each item will perfectly coordinate with every other part.

You can depend on it—Kerotest Manganese Molybdenum Steel Valves and Fittings will do THEIR part of the job—but that is not enough. What about all the other items you use in a Christmas Tree Assembly?

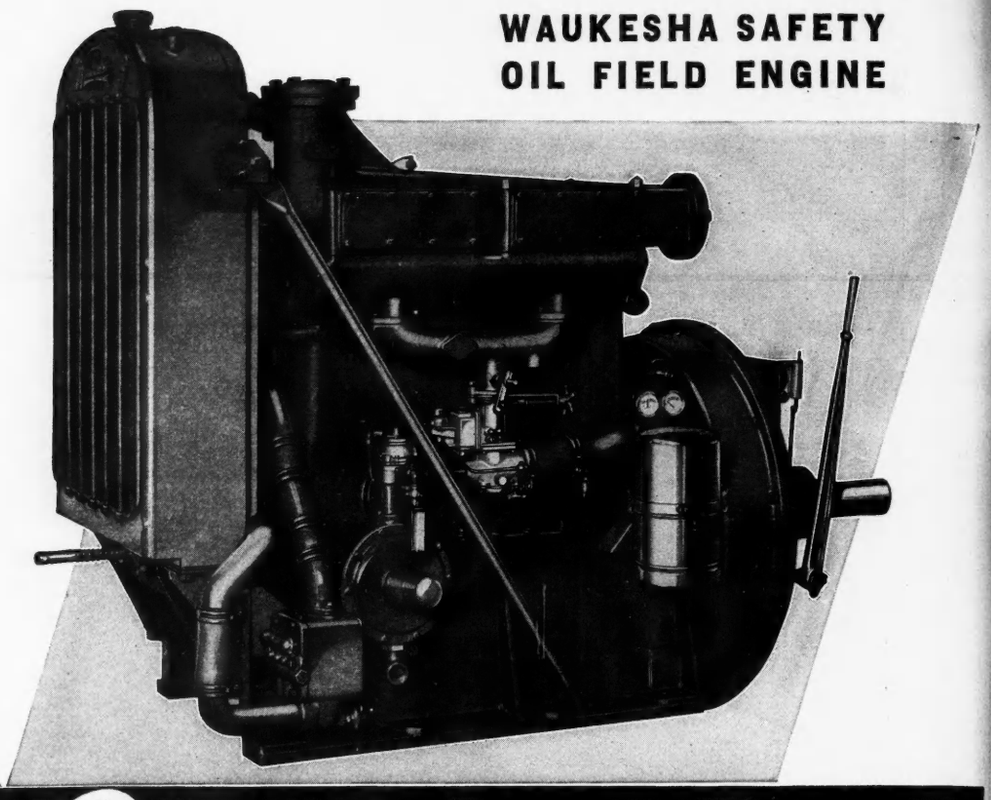
Remember, Kerotest offers you a complete Christmas Tree line designed to give the same perfect service as their valves, including Heat Treated Forged Steel Control Chokes, Forged Flange Unions with Armco Iron Ring Joint Gaskets, Heat Treated Bolts and Fittings of all types—giving you the maximum factor of safety and the minimum possibility of trouble on your well. Inquire about it.

KEROTEST

KEROTEST MANUFACTURING CO.

PITTSBURGH, PENNSYLVANIA

WAUKESHA SAFETY OIL FIELD ENGINE



Safe Power

TROUBLE-FREE OPERATION . . LOWER UP-KEEP . . . . . .

In designing this engine for every oil field service, Waukesha engineers met the operator's double demand for—a high degree of safety from accidental ignition of inflammable vapors or escaping gas . . . and trouble-free, low up-keep performance.

Water Cooled Manifold—The exhaust manifold, entirely surrounded by water, forms the sole outlet from engine to radiator. All water, after cooling engine, passes through manifold jacket.

Gas-Tight Ignition System—A gas tight water-proof magneto is used, together with super-insulated, water-proof cables, which are connected by screw couplings to the cover plate enclosing the spark plug chamber. A screened opening in the plug chamber provides ventilation for spark plugs and terminals.

Automatic Stop—in case of oil or water shortage—is another important safety feature.

Wide Operating Speed Range—Full loads at 1050 rpm maximum for continuous stationary duty; no load, 1200 rpm maximum for intermittent duty.

Triple Size Clutch—The liberal size and easy adjustment of the clutch contributes materially to low maintenance cost.

Oversize Flywheel—The large 30 in. diam. flywheel, like the clutch, is standard equipment.

The Waukesha Safety Oil Field Engine is built in one size only . . . 4 cylinders, 45 hp. to 60 hp. *Write* for Bulletin 898. *Waukesha Motor Company, Waukesha, Wisconsin.*

WAUKESHA ENGINES

Get THAT Fish!

You can **DEPEND** upon these

Safe-Modern BAASH-ROSS FISHING TOOLS

Too much depends on the successful completion of even the smallest fishing job to take chances. That is why so many operators in active drilling fields throughout the world specify these Baash-Ross SAFE-MODERN fishing tools. They have found through years of experience with them that the tools shown on this page can always be depended upon to do the job safely and economically.

BAASH-ROSS IMPROVED KAMMERDINER ROTARY JAR

Automatic Torque Controlled

The only straight pull jar that is so completely controlled from the surface that the strength of the blow may be varied instantly as circumstances demand. Will deliver 8 blows per minute. An upward strain trips the jar; lowering the fishing string sets the jar for another blow. Operation unaffected by the condition of the hole. Made by Baash-Ross exclusively.

BAASH-ROSS TYPE "B" AUTOLOCK SAFETY JOINT

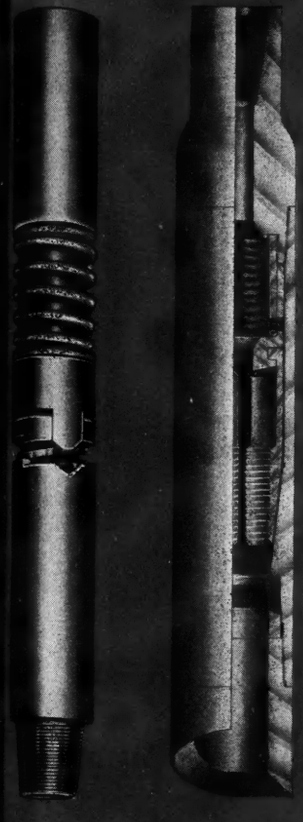
This safety joint is run immediately above all types of fishing tools. Permits all necessary rotation in an unscrewing direction; releases readily at the will of the operator. Heavy driving shoulders transmit the torque in a screwing direction. Will not spiral off from wall friction or turning of the pipe.

BAASH-ROSS ROTARY RELEASING SPEAR

This spear withstands continuous jarring without damage and without bulging the pipe being pulled. Extra long slips are solidly backed up by the flat surfaces on the body in all positions. Slips are automatically equalized—they set evenly, hold the pipe securely and release positively when desired.

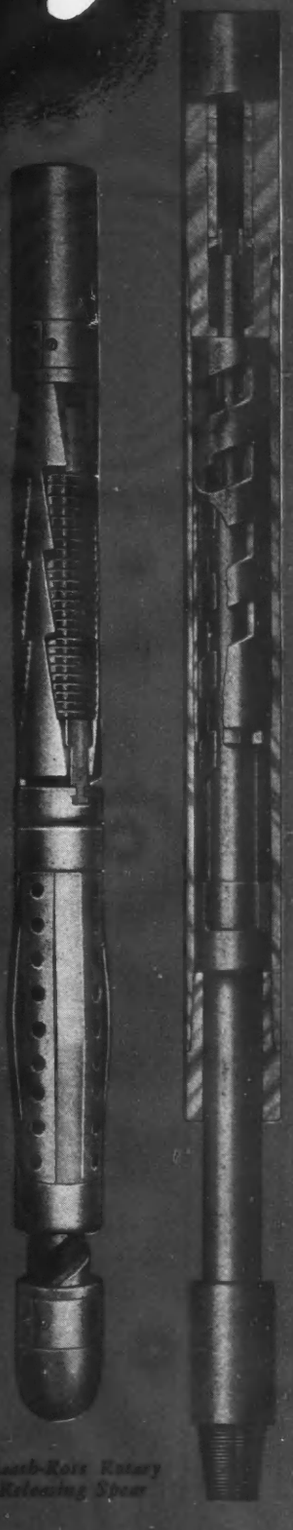
BAASH-ROSS TYPE "B" ROTARY RELEASING SOCKET

Here is another perfect team-mate for the Baash-Ross Rotary Jar. The strong slips act in unison in gripping the fish. All of the slips release positively at the same time if for any reason the fish cannot be pulled. Can be used with packing to circulate the fish loose, or without the packing feature, as desired.



Baash-Ross Type "B" Autolock Safety Joint (Released Position)

Baash-Ross Type "B" Rotary Releasing Socket—Showing Packing



Baash-Ross Rotary Releasing Spear

Cross Section View of Baash-Ross Improved Kammerdiner Rotary Jar—Automatic Torque Controlled. (Jar Shown In Tripped Position.)

Refer to Pages 145, 146, 147 and 148 of your 1936 Composite Catalog for sizes and operating details of the tools shown on this page. All other Baash-Ross products are also illustrated and described.

BAASH-ROSS TOOL COMPANY B-R

BAASH-ROSS TOOL COMPANY

Telephone 3-4406
1559 S. E. 29th St.
OKLAHOMA CITY

Telephone Fairfax 9363
5300 Clinton Drive
HOUSTON

General Offices
5512 Boyle Ave.
LOS ANGELES

Export Office
30 Church St.
NEW YORK, N. Y., U. S. A.

Gulf Coast Distributors: NORVELL-WILDER SUPPLY CO.

TO TEST FOR WATER SHUT-OFF

Gun-Perforate

NO 5

. . . OF A SERIES OF GUN PERFORATOR APPLICATIONS . . .

Says "Perforating Pete":

"Our Gun Perforator gives you a dependable method of testing your casing shoe water shut-offs before drilling into the producing sand. Figure 13 in our Bulletin here tells you the story:

"You've landed your casing in this impervious shale below the water stratum and cemented her in solid. You then clean out the cement down to the shoe, have us make from four to ten Gun-Perforations through casing and cement, penetrating the shale just above the top of the shoe, then make your usual test for water shut-off.

"By firing only the two bottom chambers of our Gun Perforator each run, we can give you, when necessary, a ring of holes starting only 7 inches and ending 13 inches from the bottom.

"If your cement job happens to test wet, you can utilize the same Gun-Perforations for a squeeze job, then make another complete shut-off test.

"This method is applicable to wells where your impervious formation is very narrow, or where your producing sands are cranky.

"Of course, you should get the okay of the Mining Bureau Deputy Supervisor before starting a test of this kind.

"Figure 14, here in the book, shows you the commonly used way to test the efficiency and extent of ordinary cement jobs . . . whether squeeze or full-hole-cemented casings . . . by Gun-Perforating the shale either below or above the water stratum. In some cases, it's wise to test both above AND below, for a double check on your water shut-off."

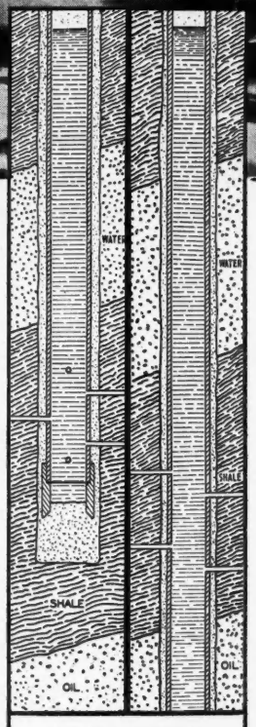


Fig. 13 Fig. 14

Fig. 13—Casing Shoe Test

Fig. 14—Intermediate Test

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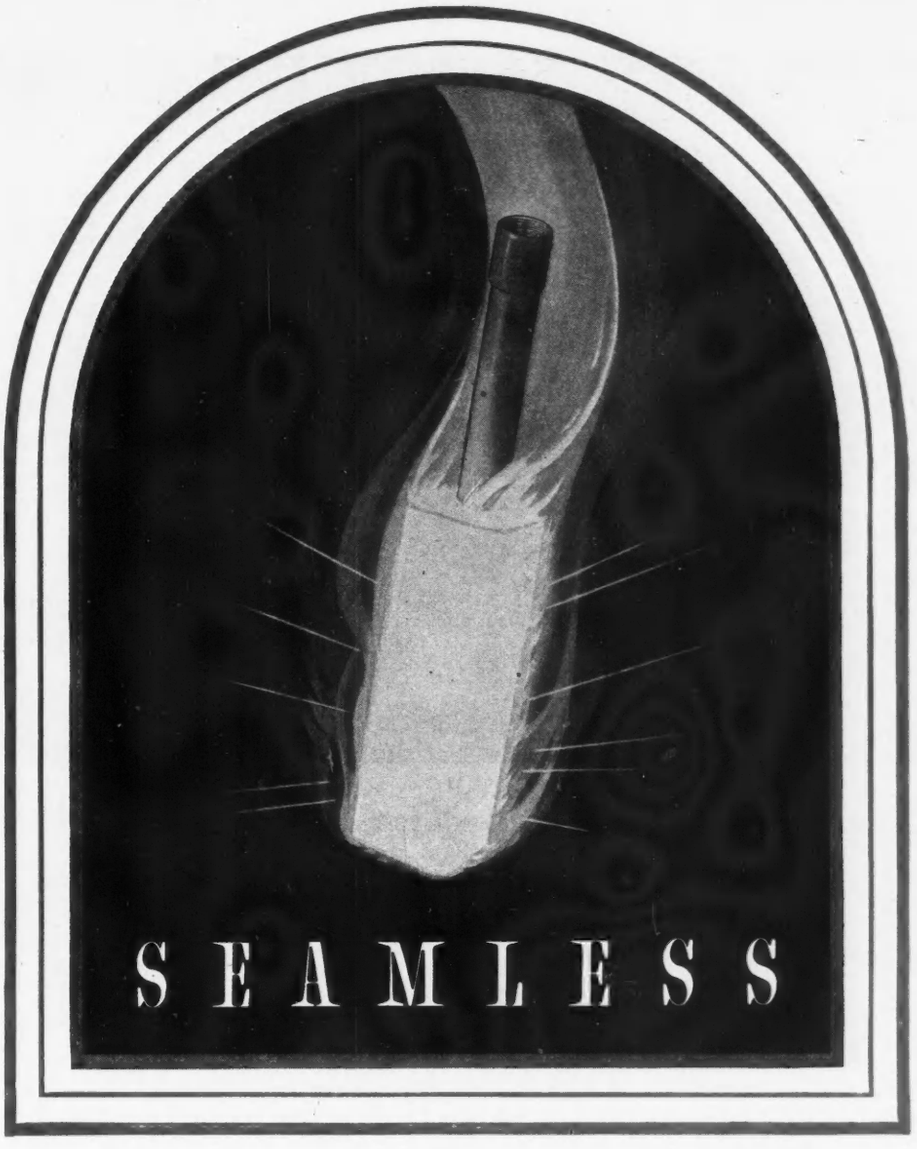

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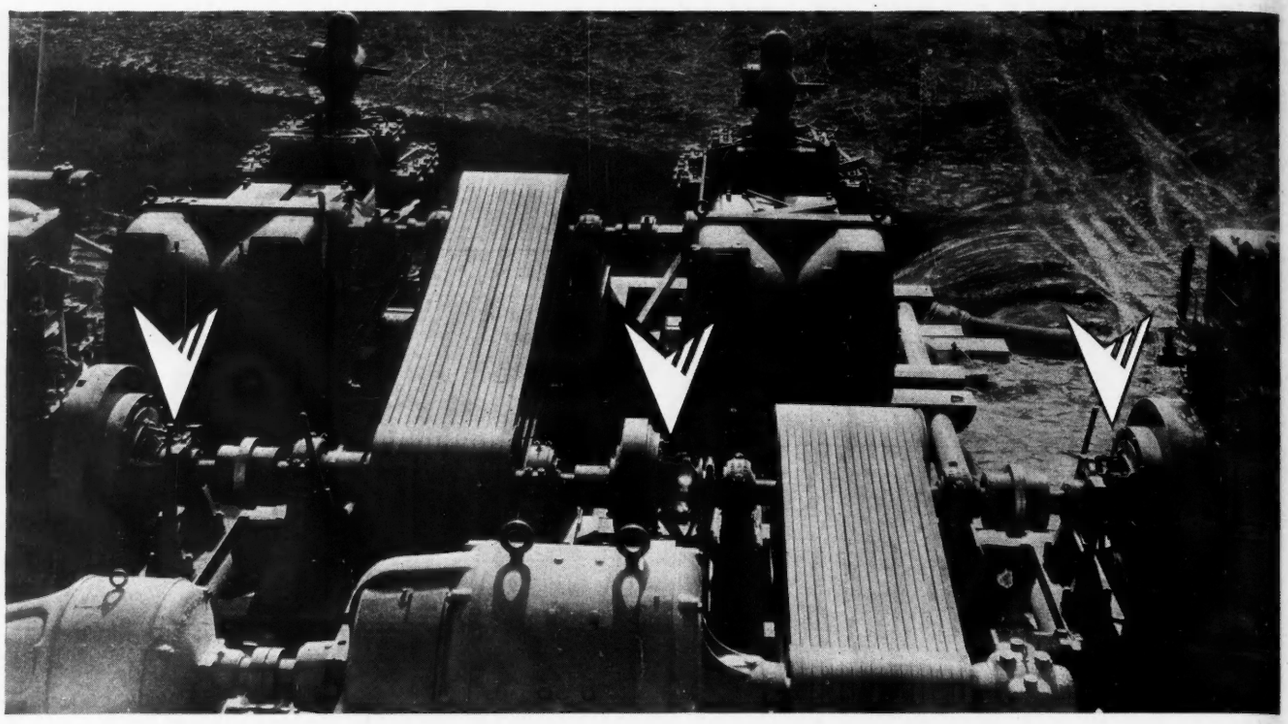

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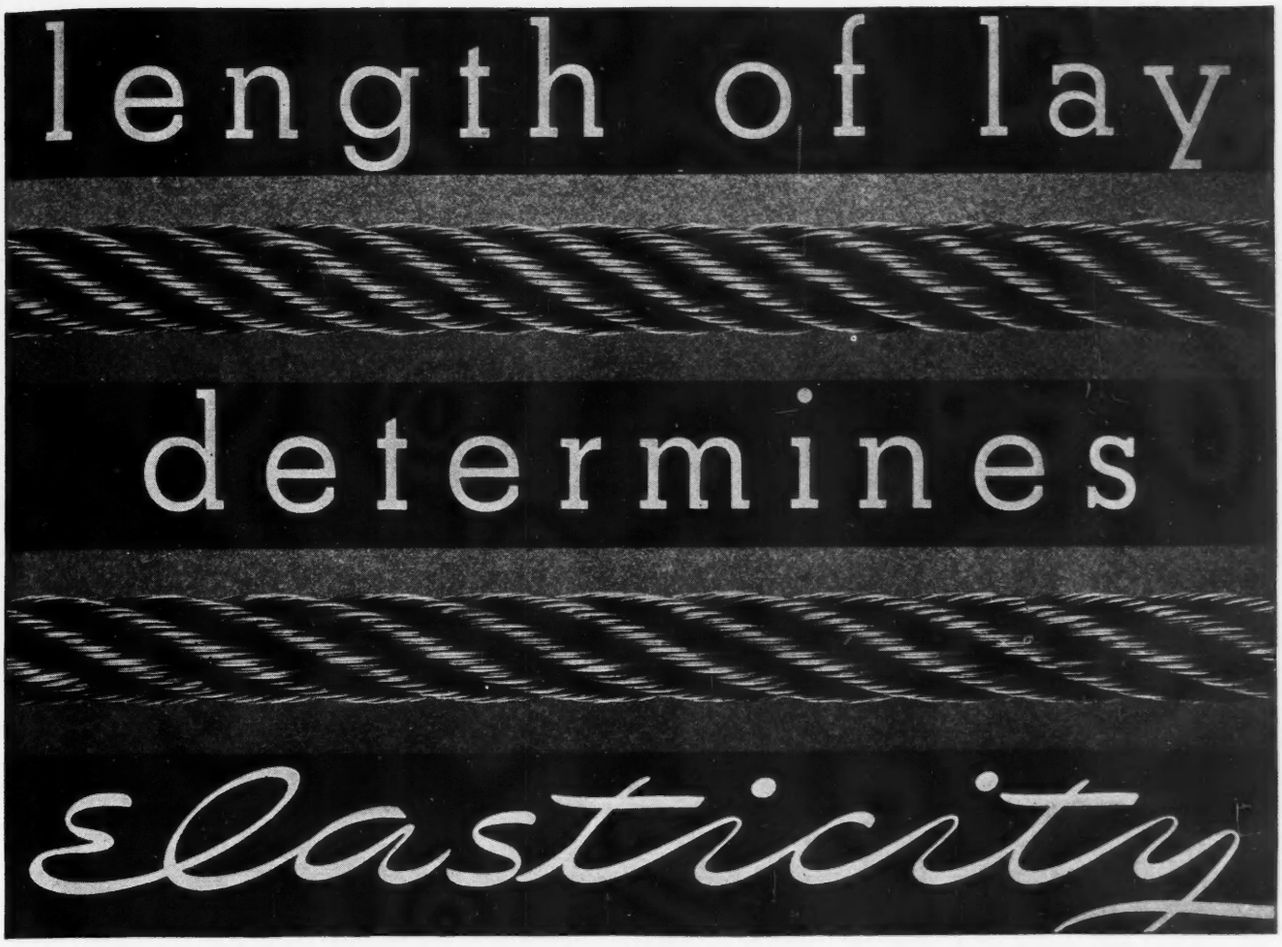
length of lay determines elasticity



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THE OIL WEEKLY

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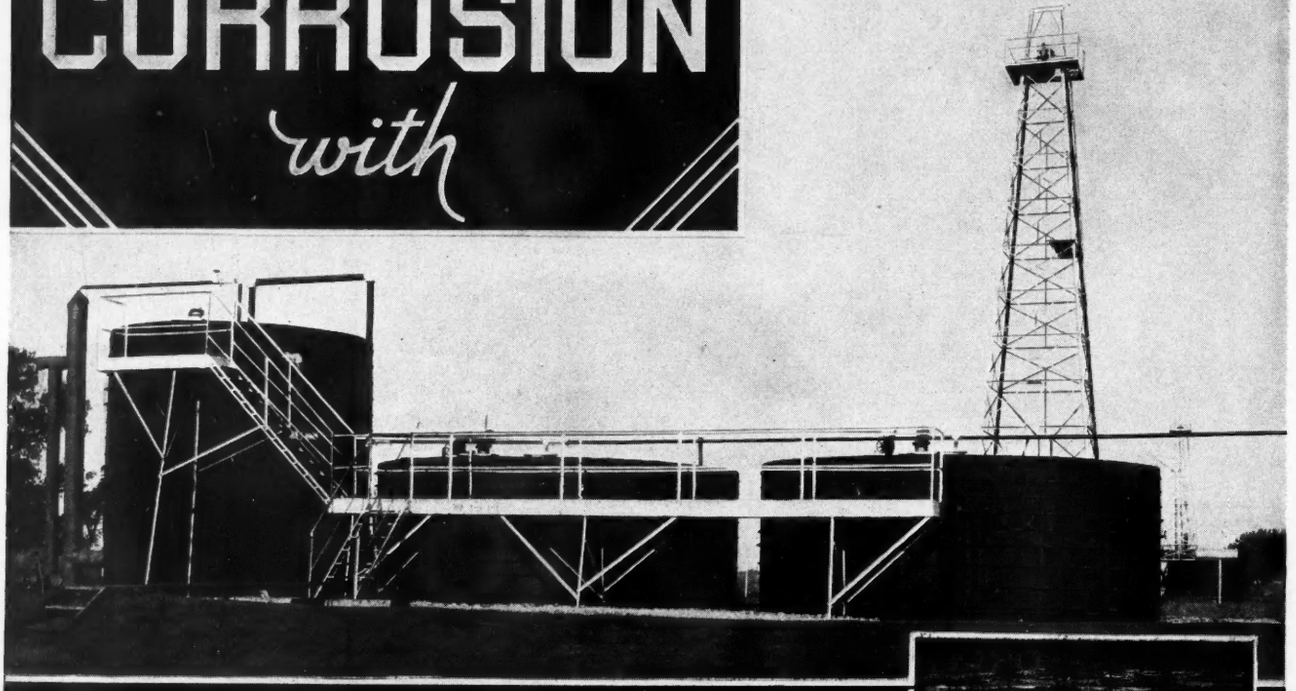

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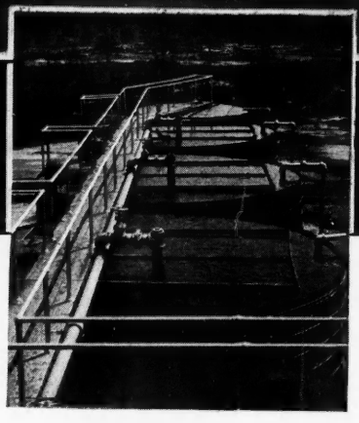

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GEOLOGY 28 JUN 50

THE OIL WEEKLY

FOR OIL AND GAS PRODUCERS
AND PIPE LINE MEN

ENGINEERING NEWS STATISTICS

WARREN L. BAKER, Editor.

. . . this Week

REPRESENTATIVE Disney of Oklahoma, June 8, petitioned the rules committee for right-of-way for the Disney Bill so the measure, doubling present imported oil excise taxes, might be considered before congress adjourns. But, members interested in the bill see no chance of its enactment this year unless the session is prolonged beyond expectations. In its report, the ways and means committee recommended all reference to asphalt, on which a tax of two dollars per ton was proposed, be eliminated from the bill. **Page 22.**

STEPS toward organizing a permanent body to set in motion an industry-owned oil exposition in Houston were taken last week. Chairmen and an executive committee were selected and will draw up by-laws, charter, etc. Their recommendations will be sent to the temporary board of directors, after which a permanent directing body and officials will be named. **Page 23.**

HIGHER crude prices are being urged by E. A. Landreth, who has sent a wire expressing his views to all major purchasers of oil. Landreth believes an increase in the price of oil would result in great morale benefits and would promote a more cooperative spirit among producers to the extent production and inside drilling would be curtailed. He points out the recent developments that have improved the position of the industry to the point he thinks consideration should be given to a general move to raise the present oil prices. **Page 23.**

THE north end or Mansion area of the Oklahoma City field is experiencing a town lot drilling rush that has had few equals. The big question, of course, is whether these 6300-foot wells will pay out despite the fact they have a low bottom-hole initial pressure, that water is making its appearance in several wells and that the wells are being spaced closely. Only time can answer these important questions, and meanwhile interest is centered in the various operations being performed. The greatest mechanical difficulty to date has been twisted drill pipe strings, due no doubt to too much stress on footage speed. A campaign against noise and vibration is another interesting engineering attempt. The Oklahoma City field is the site of practically every type of drilling rig on the market, consequently has attracted the attention of drilling men for this reason. **Page 35.**

MANAGEMENT of Royal Dutch Group, headed by Sir Henry Deterding, after taking care of sundry expenses and setting aside enough to retire certain subsidiary bonds, did well enough in 1935 to declare a dividend of 10½ percent on the common stock. They say things look better. The world's production in 1935 was estimated by statisticians of N. V. Koninklijke Nederlandsche Maatschappij Tot Exploitatie van Petroleumbronnen in Nederlandsch-Indie, the official name of the Royal Dutch Group for Working of Petroleum Wells in the Netherlands Indies, as being 226,472,024 metric tons in 1935. Of that amount, Royal Dutch Shell subsidiaries accounted for 26,620,019 metric tons, or better than 11.7 percent. **Page 32.**

The Oil Man's Calendar

JUNE 17–20	American Society of Mechanical Engineers, Dallas, Texas.
18–19	Pennsylvania Grade Crude Oil Association, State College, Pennsylvania.
JULY 31	Interstate Oil Compact Commission, Dallas, Texas.
SEPT. 16–18	National Petroleum Association, Atlantic City, New Jersey. American Petroleum Institute, Division of Production, Mid-Continent District, Probably at Oklahoma City.
OCT.	American Institute of Mining and Metallurgical Engineers, Cleveland, Ohio.
NOV. 9–12	American Petroleum Institute, 17th Annual Meeting, Chicago, Illinois.
NOV. 30–DEC. 1	Independent Petroleum Association of America, Biltmore Hotel, Oklahoma City, Oklahoma.

THE Texas Railroad Commission hearing on the Texas side of the Rodessa field has been postponed indefinitely. It will not be held until commission engineers have completed a study of gas/oil ratios in the field. Wells tested todate have shown but one producing more than 2000/1 ratio permitted by the commission, although many wells on the Louisiana side produce far in excess of that amount **Page 22.**

THE important gas rate case in which Humble Oil & Refining Company and M & M Pipe Line Company are involved with the state has been set for submission on October 14 by the Third Court of Civil Appeals. Humble Oil & Refining Company had a contract with M & M Pipe Line Company whereby it was selling gas at the well head of Raccoon Bend wells to the latter for 12 cents per thousand, but last year the Texas Railroad Commission established a gas rate of five cents per thousand for this field. Humble Oil & Refining Company is contesting the commission's rate. **Page 22.**

MEASUREMENT of wet or casing-head gas presents many of the problems found in dry gas measuring plus many more factors peculiar to itself. Proper measurement of wet gas includes the removal or decreasing to a minimum all other substances in the gas, and preventing these substances from entering the meter run. Where it is impossible to have complete removal of foreign matters, meters, meter runs and plates must be inspected, cleaned, replaced and checked continually. **Page 66.**

THE question of permeability has become a vital factor as engineers study more closely the problem of increased recovery from oil sands. Permeability is governed by the grain size and shape and the type of cementing material. All these underground conditions must be determined and weighted carefully. However, the results bring to light such knowledge that compensates the work and expense when secondary recovery methods are being contemplated. **Page 58.**

GEOLOGY 28 JUN 36

Disney Bill Up

SPONSOR ASKS RIGHT-OF-WAY FOR PENDING LEGISLATION

WASHINGTON, D.C.

A FAVORABLE report on the Disney bill, doubling the present imported-oil excise taxes and restricting imports, was submitted to the house of representatives by the ways and means committee June 8, and Representative Disney of Oklahoma, sponsor of the measure, immediately asked the rules committee for right-of-way for the legislation so that it might be considered before congress adjourned.

Despite the action of the ways and means committee, members interested in the bill saw no chance for its enactment this year, unless the session is prolonged far beyond any present expectations, since, even though a rule might be secured and the bill passed by the house, there is little probability of securing quick action in the senate.

In its report, the committee recommended that all reference to asphalt, on which a $2 a ton tax was proposed, be eliminated from the bill. Although the committee made no explanation of the reasons for this recommendation, it was considered based on representations made during hearings last month that a tax would imperil the road-building programs of the states.

"The primary purpose of this bill is to provide revenue without imposing burdens upon a domestic industry or upon the ultimate consumer," the committee stated in the report. "Incidental to this main purpose are the following expected results:

"To assist the petroleum-producing states of the union in their efforts to avoid wasteful production of petroleum;

"To make easier the stabilization of the domestic petroleum industry;

"To provide for the admission of foreign petroleum and its products in a fixed proportion to the domestic consumption, thereby cooperating with the states in the interstate compact, and the enforcement of the Connally act."

Eliminate Tax Exemption

The committee pointed out that the bill would eliminate the exemption from tax now granted to fuel oil imported for supplies of vessels, adding that such importations last year amounted to 13,402,217 barrels, a marked increase over the amounts imported in preceding year which "indicates a steady encroachment upon this important market for domestic fuel oil." In 1933, these importations were 6,606,298 barrels and in 1934, 7,669,512 barrels. Imports now, it was stated, are between five or six times the daily average for the supposedly "typical" period, the last six months of 1932.

Arguments for the taxes on imported oil products are as persuasive today as they were in 1932, when they were first proposed, the committee asserted, and even the doubling of the tax on motor fuel will not destroy entirely the margin now enjoyed by the imported product.

"The other taxes proposed in this measure are those which are in the revenue act at present, with the exception of a new tax proposed for asphalt, natural or otherwise, upon which a levy of $2 per ton is provided," the report continued. "At present this asphalt is admitted free of all duty and because of its lower production costs, due to the lower wages paid foreign labor and its freedom from the various taxes imposed upon the industry in this country, it has been able to take over 50 percent of the domestic market. As a result, we have the unusual spectacle of a nation producing around 70 percent of the world's petroleum, importing over 50 percent of an important petroleum product from nations which produce less than 10 percent of the petroleum marketed.

"It was brought out at the hearing that these excise taxes, allowing to the importers 4.5 percent of the national consumptive demand as set forth in the next section of the bill, should add approximately $10,000,000 to the federal income during the next twelve months after the passage of the measure. This estimate was based upon the returns which have been made during the period that these taxes have been in effect, and also upon the expected increase in the demand for petroleum products which is anticipated.

"This bill is basically a revenue bill," the committee concluded, "but it has incidental values to the oil industry and to the consuming public as follows:

"1. The oil states compact is unable to allocate accurately state quotas for production without a definite knowledge of the amount of oil which will be imported, and any allocation which they may make under present conditions easily may be thrown out of balance should imports be rapidly increased. This bill cures this situation.

"2. This bill eliminates the threat of disruption which constantly hangs over the domestic price structure for crude oil and refined products, due to the uncertainty of the supply. It will tend to stabilize the prices of crude oil and its products.

"3. The bill will prevent the large importers from disrupting the price structure through their ability to flood the market with cheap oil.

"4. The bill will eliminate the competition of domestic labor with low-priced foreign labor."

POSTPONE RODESSA

Hearing to be held later; now studying gas flow

AUSTIN.

THE Texas Railroad Commission last week postponed indefinitely its hearing on the Rodessa field, which was scheduled for June 12 at Marshall.

Meanwhile, commission engineers were making a careful survey of the field, emphasizing studies of the gas-oil ratio of wells which are producing there. Of the 12 wells listed on the proration schedule effective June 1, only one well was producing with a gas-oil ratio in excess of 2000/1, the maximum allowance fixed by Railroad Commission proration orders.

Reports circulated in Austin, however, indicate that the average ratio for wells in both Texas and Louisiana is 15,000/1, which would indicate that some wells are producing in Louisiana with very high gas-oil ratios.

As yet the Texas Commission has been unsuccessful in its attempt to arrange a joint hearing with officials of conservation boards from both states sitting on the bench. Whether this will finally be accomplished is uncertain, but it would probably do much to effect concerted control of operations in the field.

Since the Texas Commission has chosen to reduce allowables and keep them in line with those of Louisiana, no immediate concern is expressed by operators over the possibility of a conflict between the two states that might lead to excessive production from the field.

GAS RATE CASE

Hearing set for October 12, on Humble suit

AUSTIN.

THE Third Court of Civil Appeals has set for submission on October 14 the appeal of the M & M Pipe Line Company case.

This case is one of the most important on the docket for those oil companies who are selling their gas production for use as light and fuel. M & M Pipe Line Company purchases gas from Humble Oil & Refining Company out of the Raccoon Bend field, and delivers it to various towns nearby. Humble Oil & Refining Company has no control over the gas after it leaves the well head and is operating under contract, whereby M & M Pipe Line Company pays 12 cents a thousand at the well.

Last year the Texas Railroad Commission, in establishing gas rates for the towns served by the M & M Pipe Line Company, fixed the price of gas at the well head at five cents. Humble Oil & Refining Company immediately enjoined this order and seeks now a permanent injunction, contending that the 12-cent price agreed upon is a private contract over which the railroad commission has no jurisdiction since Humble Oil & Refining Company is a producer of gas and in no sense a public utility.

The commission contends, however, that it is impossible to establish rates to be paid by consumers for gas, unless the price can be controlled from the well to the burner tip.

It is this question that the appellate court will have before it when the submission is made in October.

Since many other oil companies are selling gas to distributors for the domestic market, the decision will affect a great many operators.

CUT SUNBURST

CASPER.

EFFECTIVE June 5, The Ohio Oil Company reduced its posting for Sunburst, Montana, crude to $1.15 a barrel from $1.25. The $1.25 price had been in effect since January 9, 1936.

Houston Oil Show

STEPS TOWARD PERMANENT ORGANIZATION ARE TAKEN

HOUSTON.

STEPS toward a permanent organization to handle an industry-owned oil exposition in Houston on years alternating with the International Petroleum Exposition in Tulsa were taken by the temporary board of directors at a meeting held in Houston June 10. John R. Suman, vice president, Humble Oil & Refining Company, was elected chairman of the board, and Chase Sutton, manager of Pure Oil Company's operations in the Texas-Louisiana Gulf Coast, was elected vice-chairman.

An executive committee, consisting of James Abercrombie, Abercrombie & Harrison; S. P. Brown, vice president, Hughes Tool Company; W. L. Childs, general manager, Reed Roller Bit Company; C. B. McDaniel; W. B. Sharp, president, Mission Manufacturing Company; Chase Sutton and Wallace Wilson, president, Wilson Supply Company, was appointed by the chairman to act as an operating body pending completion of organization plans. Ray L. Dudley, president, Gulf Publishing Company, was elected secretary of the committee.

Organization Committee

An organization committee, consisting of George Hill, president, Houston Oil Company; T. J. Donoghue, vice president, The Texas Company; Frank Carothers, branch manager, Norvell-Wilder Supply Company, and H. W. Millmine, president, Texas Rubber Specialty Company, was appointed by the chairman to draw up by-laws and take steps toward the chartering of the association as a non-profit educational corporation.

The organization committee will report back to the executive committee which will in turn pass the recommendations to the temporary board. The executive committee will select for recommendation to the board a manager for the exposition, choose dates for the exposition, etc.

The names of a number of the committee of 35 appointed to convert the temporary organization for an oil show in Houston into an industry-owned permanent organization were inadvertently omitted from the last week's OIL WEEKLY.

The following supply men were elected to this committee of 35 and should be added to the list published in last week's OIL WEEKLY:

George O'Leary, Houston Oilfield Material Company; Robert J. Miller, Robert J. Miller Company; C. B. Moore, Frick-Reid Supply Corporation; Frank Carothers, Norvell-Wilder Supply Company; Wallace Wilson, Wilson Supply Company; F. H. Thrailkill, Continental Supply Company; N. W. Phelps, Oil Well Supply Company; C. R. Patterson, National Supply Company.

Other members of the temporary board chosen June 5, at a meeting of nearly 100 oil men, manufacturers and supply men, were as follows:

John R. Suman, Humble Oil & Refining Company; F. M. Nowery, United Gas Company; James Harrison; A. T. McDannald, Smith & McDannald; Harry Hanszen; Sidney Childress, Rio Bravo Oil Company; T. E. Swigart, Shell Petroleum Corporation; Joe H. Russell, Gulf Production Company; A. M. McCorkle, Stanolind Oil & Gas Company; T. J. Donoghue, The Texas Company; Chase Sutton, Pure Oil Company; George Hill, Houston Oil Company; J. S. Abercrombie, Abercrombie & Harrison; H. J. Lund, The California Company; D. B. McDaniels; R. W. Pack, Sun Oil Company, Beaumont; Al Buchanan, San Antonio; John Crotty, Republic Supply Company; H. J. Cullinan, Petroleum Iron Works; G. O. Koen, W.K.M. Company; S. P. Brown, Hughes Tool Company; W. L. Childs, Reed Roller Bit Company; W. C. Trout, Lufkin Foundry & Machine Company, Lufkin; H. W. Millmine, Texas Rubber Specialty Company; H. J. Craig, Baash-Ross Tool Company; W. B. Sharp, Mission Manufacturing Company, and John H. Teer, Layne & Bowler Company.

PRICES TOO LOW

Landreth urges buyers to increase crude postings

FORT WORTH.

E. A. LANDRETH, president, Landreth Production Company, Fort Worth, has sent a wire to all major purchasers of crude oil and to the executives of most of the larger companies urging that they increase the price of crude. Landreth is confident that if the price of oil is raised, great benefits to the morale of the industry will follow, and that as a result a more co-operative spirit will prevail among all producers and state regulatory bodies to the extent that they will promptly and gladly make any cutback in daily production and inside drilling that may be necessary to maintain stability of the higher market price.

The complete telegram follows:

Sends Telegram

"Following the lines of our previous correspondence and conversations, I am wiring you to urge that you give immediate favorable consideration to posting a higher schedule of crude oil prices. Recent action of the state regulatory bodies of Texas, Oklahoma and Kansas fixing lower allowable production has resulted in a decrease of 63,200 barrels in average daily production in the United States and the withdrawal of 1,156,000 barrels of crude oil and 1,380,000 barrels of gasoline from storage last week. The Rodessa overproduction has been stopped temporarily at least and the per well allowable reduced from 350 to 275 barrels per day. Also it appears that the State of Louisiana will enact effective conservation statutes at the next legislative session if they are shown that there are rewards in the nature of increased crude prices following the present curtailment in the per well allowable.

"Have discussed the present price situation with Jack Blalock at Austin on Tuesday and find that he is unwilling to support further cuts in allowable through state compact machinery until major purchasers have made good their promises to independent producers of better crude prices in exchange for effective production control. Production control is now administered in a generally efficient manner as evidenced by lowered allowable in compact states, and co-operation of Louisiana officials shows that Rodessa hysteria was unwarranted. Chairman Thompson of the Texas Railroad Commission recently released statement pointing out that increasing demand for oil amounting to 12 percent over last year and the demonstrated ability of the states to co-operate in cutting back production promised a continuing era of prosperity for the industry.

"In view of the favorable position of the industry and the growing discontent at the delay in price increase, I urge that you post a 25-cent increase in crude prices immediately to retain confidence of your friends and officials who have expected that their past sacrifices and careful planning would result in increased crude prices to the end that the increased earnings now enjoyed by the integrated companies may be equitably extended to those engaged strictly in the business of oil production. I sincerely believe that this will be a very constructive move for the industry under the circumstances."

PIPE LINE TAXES

Intangible value hearing expected in early July

AUSTIN.

STATE Tax Commissioner R. B. Anderson has announced that hearings for adjustments of intangible values of Texas pipe lines will begin during the early part of July.

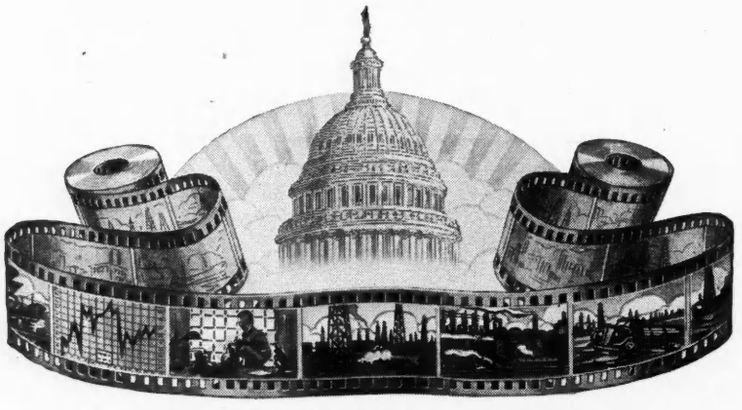
Tentative values were announced by the state tax commissioner last week, but it is usually necessary to make some adjustment in these values before the assessment may be made.

Only a few of the Texas pipe lines which are assessed under the intangible tax law are paying the tax. Most of them are awaiting the final disposal of suits now pending, which are intended to determine the constitutionality of the law.

Should the law be held constitutional, then several of the companies plan to file further suits to determine whether the assessments made against their lines are fair and reasonable.

Commissioner Anderson said that he hopes to have ready for submission this summer the three cases pending in the Third Court of Civil Appeals at Austin. Another case is pending in Federal Court at New Orleans, but no date for hearing of this case has been announced.

The Changing Panorama



THE OIL WEEKLY'S COMPOSITE VIEW OF INDUSTRY

Edited by L. J. LOGAN, Associate Editor

DESPITE the disturbed market conditions of April and May, with crude production excessive and gasoline inventories too high, oil companies are expected to show favorable financial results for the second quarter of 1936, ending June 30. The earnings promise to equal or surpass those in the similar period last year.

This will mean that for some companies the first half of 1936 will be substantially more profitable than the opening half of 1935. For in the first three months of this year, results were considerably better than in the similar period last year.

In view of the favorable showing in the first six months, there are fair prospects that the full year 1936 will equal or surpass 1935 from the standpoint of earnings. It appears reasonable to hope that this year's third quarter will compare favorably with the corresponding quarter last year, in view of the fairly satisfactory conditions now existing. The fourth quarter still is too far off to permit of any definite predictions.

The oil company earnings in 1935 were generally the best since 1930, and some concerns did even better than in 1930 or 1929.

More Business at Better Prices

Oil company earnings have been running higher this year than last year because of better prices and larger volumes of business. Prices have been better for both crude and refined oils, and consumption has been greater. In fact, new all-time records are being established this year in the demand for gasoline and also in the total demand for all United States oils.

Crude prices are better this year by the amounts of the increases placed in effect in January. Refinery prices of products have been substantially better this year than in the opening half of 1935. Retail prices also have been better.

Crude Control Offers Uncertainties

The financial results for the oil companies in the latter half of this year will depend largely on how effectively crude production is balanced with demand. It is by no means definitely assured that the crude output will be held down to a satisfactory level.

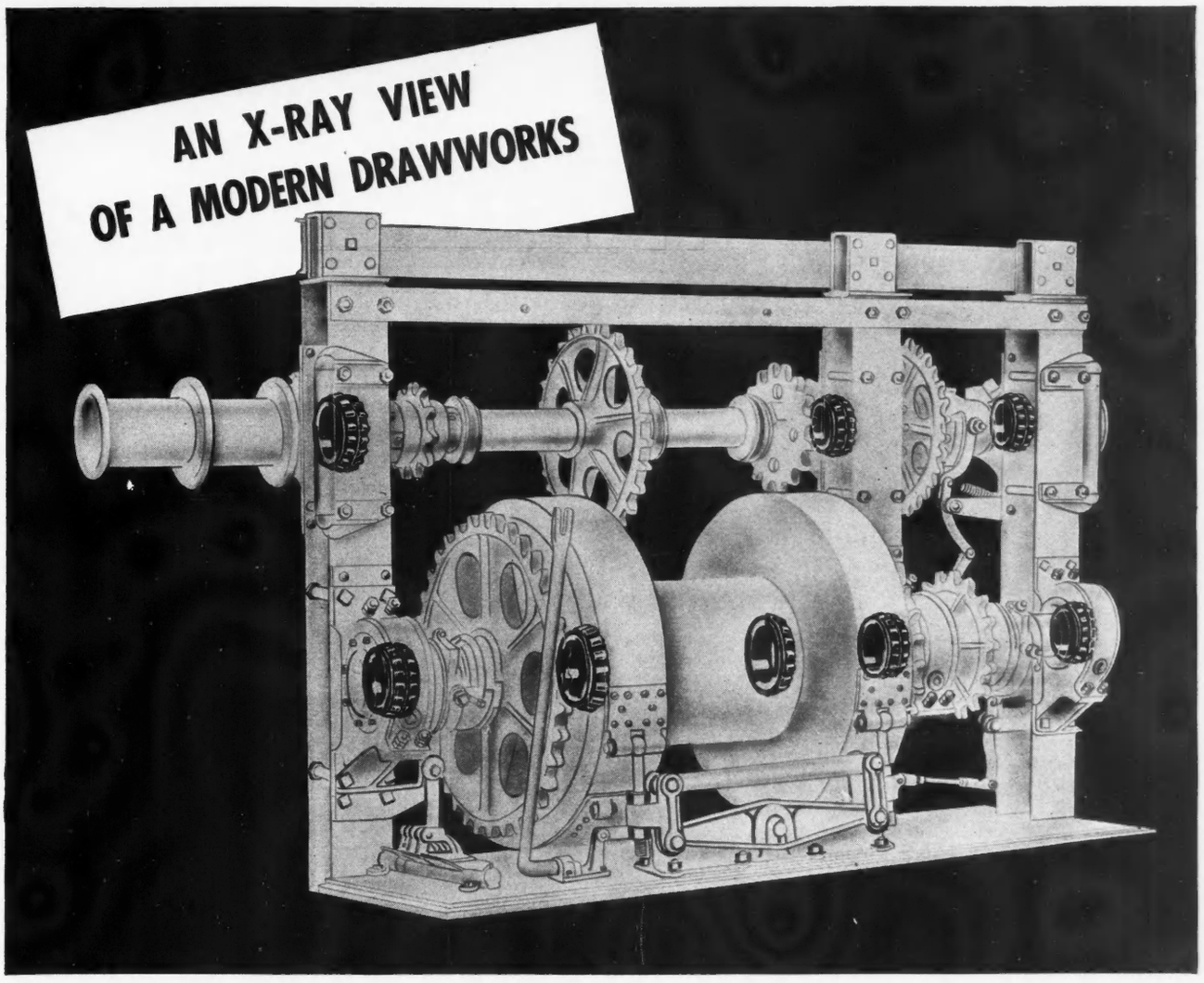
The state of Louisiana, particularly, may prevent the desired balancing of supply with demand, with flush fields in both the northern and southern sections of the state constantly tending to push the state output higher. Texas, Kansas and Oklahoma also have high potential production, and the state conservation officials are finding it difficult to hold production within the estimates of consumer demand.

In addition, a special problem still exists, as regards regulation of the Rodessa field, because of the two-state control that is involved. The field has become large on the Texas side as well as on the Louisiana side of the state line. So far, Texas has been following the lead of Louisiana in setting Rodessa field allowables. But as the field grows into the heavy producing area that seems in the making, the Texas Railroad Commission apparently will be compelled to take more initiative in prorating the field.

Rodessa Is Serious Proration Problem

Up to now the Texas commission has not been able to get the cooperation of the Louisiana officials in working out a joint program for Rodessa control. For some time the Texas commission has desired to hold a joint hearing with the Louisiana authorities, in which scientific testimony would be introduced, and following which the field would be placed under a uniform, scientific conservation program. But the Louisiana authorities have held aloof. In view of the growing importance of the field, however, it appears that overproduction is inevitable, unless the two states get together on a joint regulatory program.

The Texas commission probably would run into court attacks immediately if it sought to restrict wells on the Texas side below the allowables of wells on the Louisiana side. But if the Louisiana officials permit the per well allowables to remain high in the face of constantly increasing numbers of wells in the field, it may mean that the same per well allowables applied on the Texas side would mean a Rodessa, Texas, field allowable disproportional to the field allowables of other Texas fields. Thus the Texas commission would find it difficult to be fair to the Rodessa, Texas, producers and at the same time be



Like every other kind of heavy duty equipment used in the oil fields, the drawworks must conform to the exacting requirements of the new era of oil production. That means it must be adaptable to higher speeds and capable of handling heavier loads as wells are driven deeper and deeper to tap precious oil reserves. In modern drawworks design an increased complement of Timken Bearings assures the full utilization of power for every operation through the complete elimination of friction. Drum shafts and counter shafts are held rigidly in alignment. Radial, thrust and combined load capacity includes an ample reserve for any emergency. It will pay you to see that you get Timken Bearing protection when buying new drawworks, rotaries, swivels, drilling engines, pumps, compressors or any other kind of equipment.

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A symbol of quality for any piece of equipment with which it is associated

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN TAPERED ROLLER BEARINGS

fair to the operators in other Texas fields. The Rodessa field therefore still has potentialities for serious proration difficulties.

Control Needed at Wells and Refineries

Control of crude production consequently will be the chief factor determining whether or not the oil industry will enjoy favorable market conditions in the remainder of 1936.

In the meantime, however, there is also need for rigid restraint of refinery operations, if the markets are to be stable. Gasoline inventories were built this spring to an unprecedented peak, and consequently, the supply today is not as well balanced with demand as was the case a year ago. The inventories of finished gasoline are about 15 percent greater than a year ago, but for the rest of this year, it is estimated that gasoline demand will run only about 6 percent greater than last year.

Gasoline Stocks Too High

This unfavorable relationship of gasoline stocks to expected consumption appears to be dismissed all too readily by some, who place primary emphasis instead on the prospective heavy gasoline consumption this summer. It does appear assured that motoring and travel in general will get farther out of the depression slump this year. It also is indicated that existing gasoline stocks are largely in the hands of companies that are financially strong. It is true, moreover, that there have been encouraging reductions of gasoline inventories lately. Nevertheless, the time-proved laws of supply and demand may be counted upon to continue functioning, and therefore the existing heavy stocks of gasoline must be recognized as an unfavorable market factor. Despite the relatively favorable ratio of supply to demand that prevailed last summer, gasoline prices became unsteady in August. This year the ratio is less favorable, as indicated above, while prices are at higher levels. Consequently, it should not be surprising at any time this summer to see the gasoline market develop weakness. The gasoline market quite likely would be especially susceptible to any serious weakening of crude production control.

Markets Are Steady

The oil industry's markets lately have been generally steady, and there has been some promise that they might regain at least part of the ground lost in April and May. During those months retail prices held their own, and crude prices remained unchanged, but tank car prices receded by one eighth to one quarter cent a gallon at Mid-Continent refineries.

The better markets at present reflect the growing consumption of oils, with advent of the motoring season, and also the stricter control of crude production under June allowables in the leading producing states. Recent reductions of gasoline storage also have helped the markets.

Gains Over 1935 Decreasing

The monthly petroleum report of the Bureau of Mines issued last week and covering April operations confirms the analysis of that month's results as published in these columns May 4, page 10. The bureau report reflects the unsatisfactory control of crude output during the month, showing that crude stocks increased 2,200,000 barrels in April. In accordance with the usual seasonal trend, total stocks of finished and unfinished gasoline were reduced about 1,000,000 barrels during the month.

This report also bears out the statement made above that gasoline consumption is not running sufficiently higher this year above last year to justify the 15 percent higher gasoline stocks on hand at present. For the first four months of this year, the domestic demand for gasoline ran 9.6 percent higher than in the similar period last year. But as the year has progressed, the percentage of improvement has decreased. The domestic demand for April, 1936, was 8.2 percent greater than in April, 1935.

The slowing of the rate of expansion in demand is attested also in the bureau's figures on total demand for United States oils, embracing domestic consumption of all oil products and exports of crude and refined oils. Both domestic and export requirements are running well ahead of last year, and the total is in high ground for all time. But while the total demand for the first four months of 1936 was 11.4 percent higher than in that period last year, the total demand for April, 1936, was only 3.8 percent greater than in April, 1935.

Demand at All Time Record Level

The figures on total demand for all United States oils for both April and for the first four months of 1936 represent all time records. Previously, the highest demand in those periods occurred in 1930. The total demand in the first four months of 1936 was 373,819,000 barrels, or 5.7 percent more than in the opening four months of 1930. The demand in April, 1936, aggregated 96,504,000 barrels, or 3.7 percent more than in April, 1930.

Since petroleum demand began to shrink in the latter part of 1930, the total for 1929 stood as the all time annual record until it was slightly exceeded in 1935. This year's demand, running well ahead of that last year, consequently appears assured of setting a new all-time record. In the past eight years, 1928 to 1935, inclusive, the total demand has exceeded a billion barrels each year except 1932 and 1933.

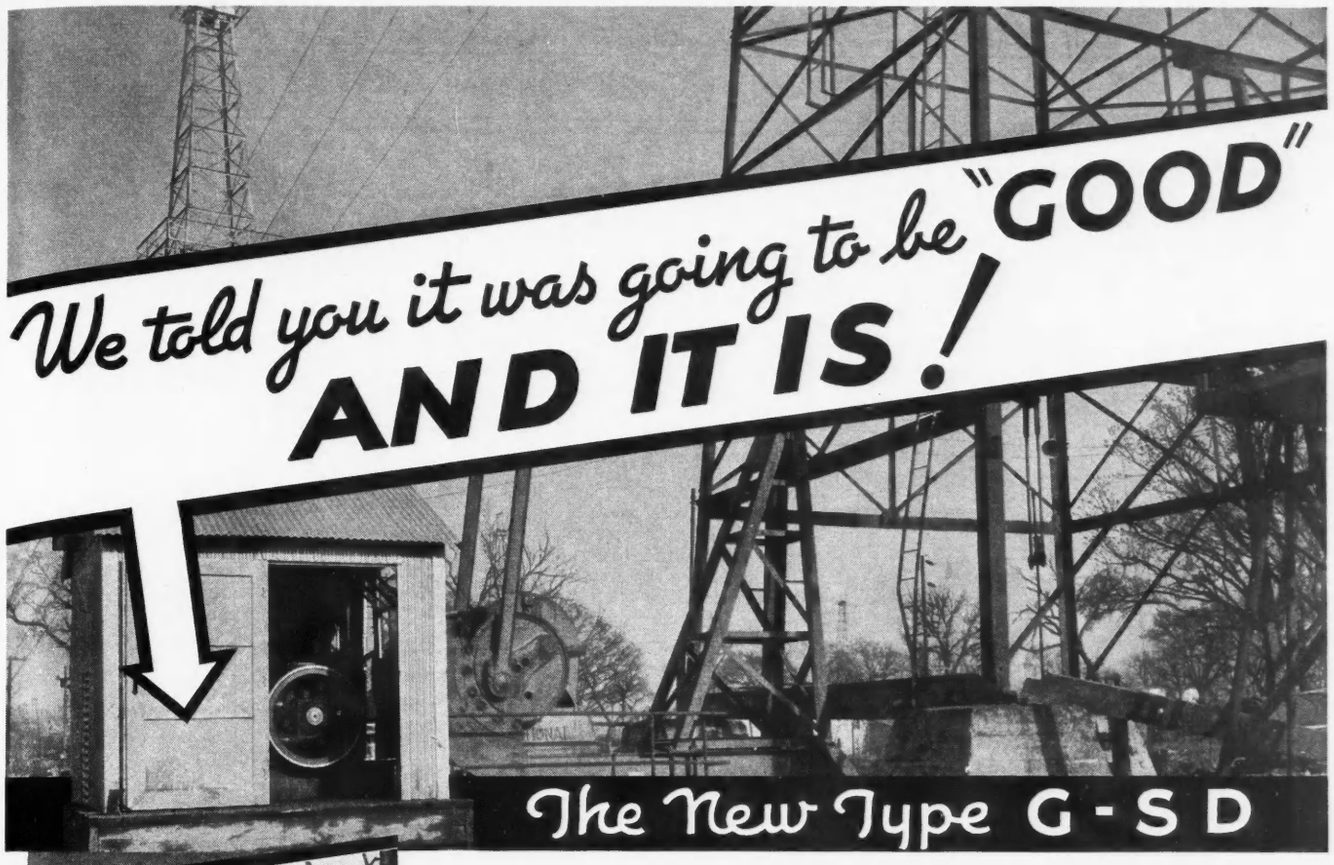
Automobile Sales Near Peak

Heavy production and sales of automobiles and trucks may not necessarily mean good times in the oil industry. But the large output of the motor vehicles does mean heavy gasoline consumption, one of the requisites for favorable oil company earnings. It is encouraging for oil concerns, therefore, that automobile sales in the first five months of this year ran about 25 percent ahead of last year's similar period, and reached the largest proportions on record for the period, with exception of only the two years 1928 and 1929.

For the second quarter of 1936 the leading automobile manufacturing companies are expected to show the largest profit since the June quarter of 1929, with the net income for this year's period about 75 percent as high as in the 1929 quarter.

Banner Year for Truck Sales

Motor truck sales have been making even more notable records than automobile sales. As regards both production and sales, it is indicated that the motor truck industry in 1936 will experience the best year in its history. Both the output and sales probably will exceed the existing all time records set in 1929. The production and sales in the first quarter of 1929 ran substantially ahead of the similar records for 1929.



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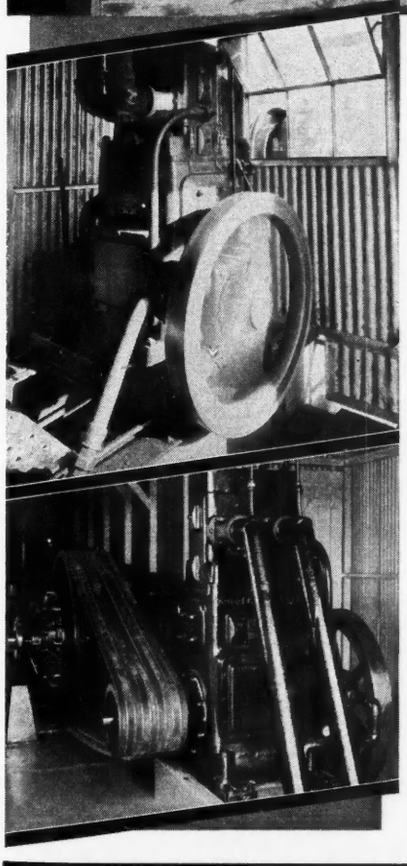

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Let our representative go over this *good engine* with you, point by point. Then you'll *know why* it is so convenient, so reliable, so economical! Meanwhile, send for folder.

TEXAS — photo at left shows Magnolia Petroleum Company's Type G-SD vertical gas engine, pumping J. C. Baldwin No. 1 and No. 2 wells near Clarkwood.

OKLAHOMA — photos at top and center show Carter Oil Company's Type G-SD vertical gas engine, pumping No. 2 well in Oklahoma City field.

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MEN IN THE INDUSTRY'S NEWS

F. F. HILL AND A. C. RUBEL ARE GIVEN PROMOTIONS BY UNION OIL COMPANY

F. F. HILL

HARRY NORRIS, veteran scout of Oklahoma, with Sinclair Prairie Oil Company, is being transferred to take charge of scouting activities in northern Louisiana. He will have offices in Shreveport. Norris was one of the first scouts in the Mid-Continent area, entering the game when the development began. He was chief scout for the Prairie Oil & Gas Company prior to the merger with the Sinclair interests, and since that time has been located at Oklahoma City.

L. B. O'NEIL of Cut Bank, Montana, has ben elected chairman of the Oil Conservation Board of the State of Montana, which was appointed recently by Governor Elmer Holt. R. P. Jackson was reappointed secretary, and T. H. Herriman was reappointed field agent. Other members of the board are: Roy C. Tarrant, Cut Bank; Howard Alger, Poplar; O. M. Webb, Sunburst; and W. E. Rice, Great Falls, Montana.

WARREN L. TODD, president of Warren L. Todd, Inc., drilling contracting firm with headquarters at Dallas, has announced change of the concern's name to T-J Drilling Company as result of recent acquisition of an interest by Blaine Johnston, former vice-president and production superintendent for Simms Oil Company. Johnston is a vice-president and maintains an office at Hobbs, New Mexico.

R. V. WHETSEL, general manager of Cia. de Gas y Combustible "Imperio," S. A., has returned to headquarters at Tampico, Mexico, after a trip to the United States.

RUBEL BECOMES PRODUCTION DIRECTOR AND HILL MADE SPECIAL REPRESENTATIVE

IN a recent bulletin issued by W. W. Orcutt, vice president of Union Oil Company, announcement is made of the release from his present duties of F. F. Hill, director of production, to act as special representative for the acquisition of lands and the care of production outside the state of California. A. C. Rubel, manager of field operations for the company succeeds Hill as director of production.

Hill is the second oldest employe in the company in point of service, having officially started work for Union in 1899. He had actually been engaged as early as 1895 but severed his connection for a short time and returned in 1899. During his long activity in field work he has been responsible for the introduction of many improvements in prevailing production and drilling practice. He is credited with the development of oil well cementing, gas lift, gas drive, sub-surface circulation, full hole rotary pipe, high speed rotary drilling and weight indicators, continuous rotary coring, and innumerable other improvements and advances that have helped to raise the process of drilling to its present highly technical status.

A. C. Rubel is a graduate in mining

[*Continued on page 31*]

A. C. RUBEL

J. C. ASKAM, CHAIRMAN OF THE A. P. I. EASTERN DISTRICT, STARTED IN THE INDUSTRY AS A YOUTH

J. C. ASKAM

HAS BEEN WITH THE OHIO OIL COMPANY SINCE THE YEAR 1912.

J. C. ASKAM, production engineer for The Ohio Oil Company, Findlay, Ohio, and who was elected chairman of the Eastern Dsitrict of the American Petroleum Institute's Division of Production at the Pittsburgh meeting a week ago, was born at Findlay, Ohio. He entered the petroleum industry as a youth, working with a pipe line gang of Buckeye Pipe Line Company. In 1912, he entered the employ of The Ohio Oil Company as an oil field roustabout and pumper, and has been with the company since that time except for two years service as an ambulance driver overseas during the World War. Askam was educated in Findlay public schools and was graduated by the University of Michigan. He is active in Institute work in the fields of petroleum technology and applied science. During the 1935-36 term he served as vice chairman of the Eastern District of the American Petroleum Institute's Division of Production.

IDEAL

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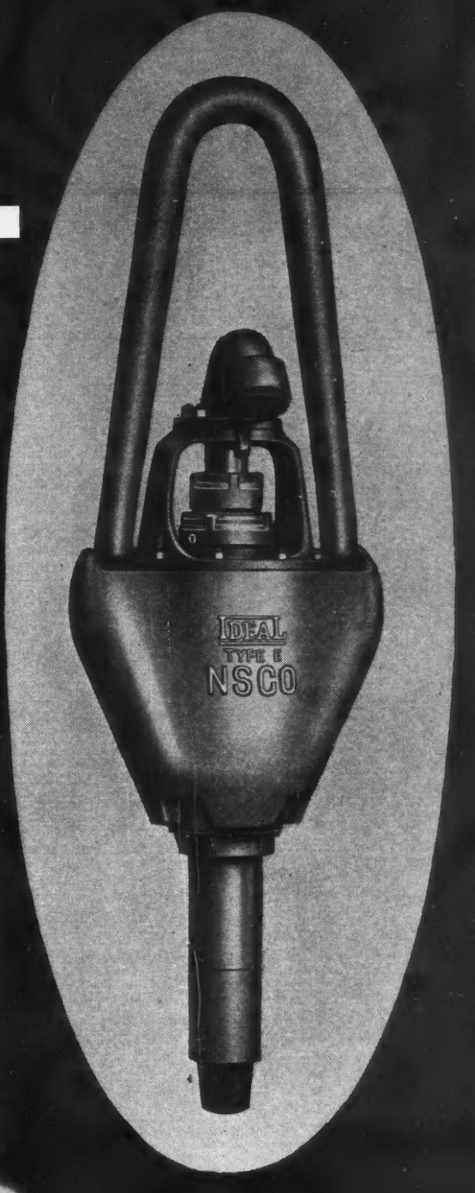
4. Preformed Weldless Bail with Eyes Bored in Line,
5. Large Pins through Bail Eyes Carry the Load in Double Shear,
6. Lower Packing Renewable without Removing Coupling,
7. Automatic Induced Oil Circulation.

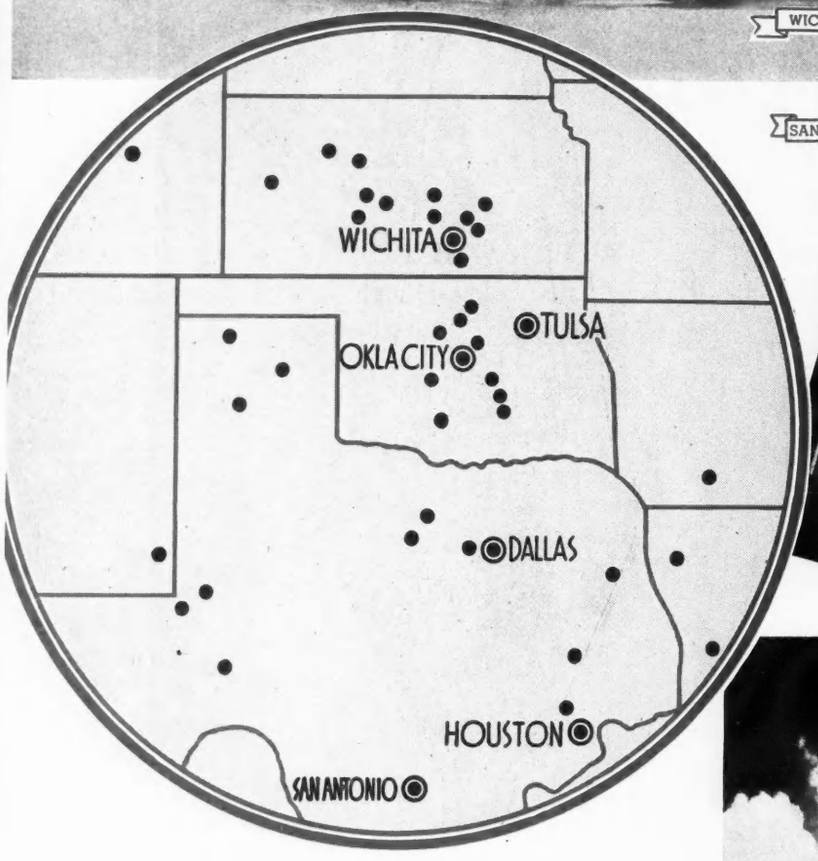
AUTOMATIC PACKING eliminates tightening glands with wrenches . . UNITARY SLEEVE AND BEARING ASSEMBLY may be removed with bearings intact and without disturbing their adjustment . . MAIN BEARING is of tapered roller type with ball bearing below to make up thrust and two radial roller bearings to insure accurate alignment of the sleeve . . HOUSING is heavy one piece steel casting forming oil reservoir and has rest for elevator links . . FLUID PASSAGE (4-inch) is favorable to pump performance.



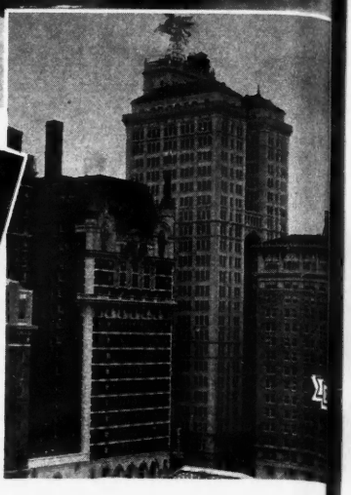
THE NATIONAL SUPPLY COMPANY

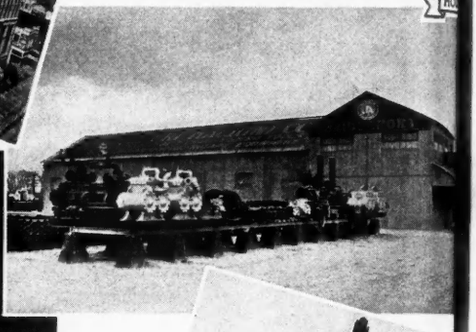
National

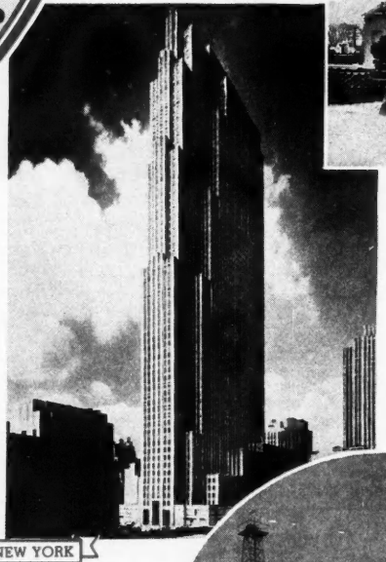
WICHITA



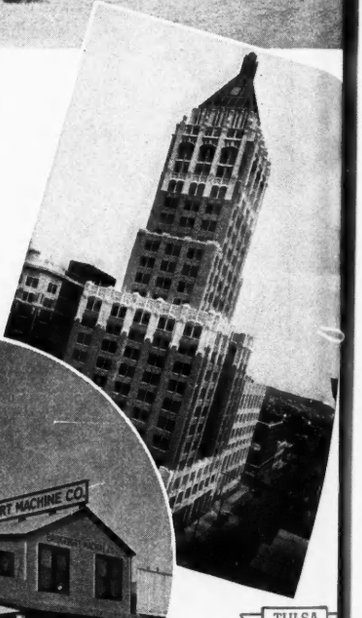
SAN ANTONIO







NEW YORK



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[*Continued from page 28*]

engineering from the University of Arizona. Following several years of exploratory geological work in Mexico he allied himself with Union Oil Company in 1923, and in 1925 was appointed petroleum engineer for the company, at the same time having charge of production in the Dominguez district. In the exploitation of that field which followed the completion of the first well, he conducted all sub-surface observations. In February, 1929, he was made chief petroleum engineer, and the following August was elevated to the position of assistant manager of field operations. He became manager of field operations in March, 1931, which position he held until this his latest promotion.

RALPH STEINMAN, chief scout for Sinclair Prairie Oil Company, Tom Brownfield, chief scout for Carter Oil Company, and Don Ross, head of the same department for Barnsdall Oil Company, recently returned to Tulsa from Dallas, where they attended the annual convention of the National Oil Scouts Association of America.

H. N. BLAKESLEE, director of the American Petroleum Institute's department of accident prevention, has been transferred from Dallas to New York, where he will maintain headquarters in 1832 R.C.A. building, 50 West 50 Street. Miss Roxy Cody, secretary to Blakeslee for five years, will continue in that position.

K. G. HOWARD, civil engineer with Mexican Gulf Oil Company at Tampico, Mexico, is spending a vacation in San Antonio.

DILWORTH HAGER addressed the Oklahoma City Geological Society June 8 at the chamber of commerce. Hager, consulting geologist of Dallas, spoke on the faults of northeast Texas and the Talco fault system. Through invitation, a number of geologists of the state were in attendance.

CHARLIE NOBLE, chief scout for Superior Oil Producing Company, Houston, is spending his vacation at home.

PAUL POTTER, assistant chief scout of Shell Petroleum Corporation, has returned to Tulsa after a two weeks vacation.

TRAIAN NITZESCU and **E. MIRCEA,** petroleum engineers with Concordia Company of Rumania, are making a study of field operating conditions in the Texas sector of the Gulf Coast.

PAUL D. TORREY was the speaker at the Houston Geological Society's weekly meeting, June 11, discussing the salt anticlines in New York state.

K. A. WALKER, formerly with Atlantic Oil Producing Company, has been made northern Oklahoma field man and scout for Skelly Oil Company with headquarters at Enid.

LEE ADAMS, Sinclair Prairie Oil Company scout at Shawnee, Oklahoma, is being transferred to the Oklahoma City area.

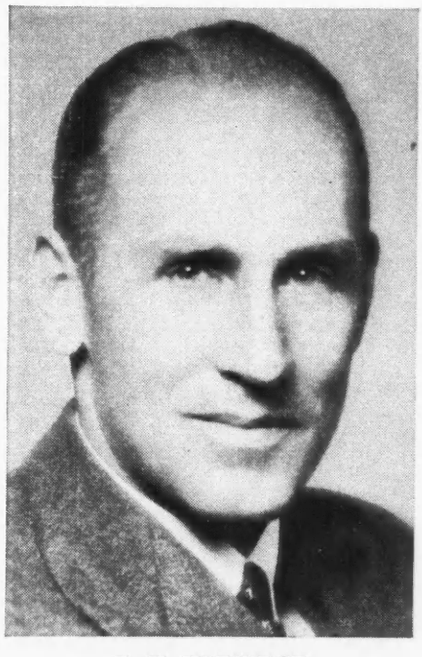
HAYES SIMPSON, formerly with Stanolind Oil & Gas Company, and Waco Turner, will be the Sinclair prairie Oil scout at Shawnee.

LEE SLATER, Phillips Petroleum Company, who has been seriously ill at St. Anthony's Hospital, Oklahoma City, is much improved and will soon be discharged.

PHILLIP B. KING of the U. S. G. S. addressed the Tulsa Geological Society at the Tulsa Building, June 8, on "Permian Rocks of the Southern Guadalupe Mountains."

R. H. HORNIDGE HEADS OIL ACCOUNTANTS SOCIETY

AT a meeting of the board of directors of the Petroleum Accountants Society the following officers were elected to service for the fiscal year starting June 1: President, R. H. Hornidge, Union Oil Company of California; first vice president, R. L. Minckler, General



R. H. HORNIDGE

Petroleum Corporation; second vice president, D. S. Kilgour, California Oil & Gas Association; secretary-treasurer, L. A. Williford, MacMillan Petroleum Corporation. The new officers will be installed at a dinner meeting to be held in the very near future.

R. E. McPHAIL, paleontologist for The Texas Company at Ardmore, Oklahoma, and lately transferred to that office from Tulsa, was married June 7 to Miss Jacquita Kreps of Tulsa. They will reside at Ardmore.

F. H. GARLAND, land department, The Texas Company at Tulsa, and J. Howard Johnson, scouting department, recently returned from a motor trip over the new International Highway to Mexico City.

C. C. HARTWELL, Hartwell Oil Company, Tulsa, in company with Miss Leona Galbreath, was kidnaped as he was leaving the Alvin Hotel. Miss Galbreath was freed from the car at her residence, Hartwell being released near Galena, Kansas, after having been beaten and tossed from the car. Motive is believed to have been robbery, as Hartwell was reputed to have been carrying considerable cash. The couple were leaving the Cavenish bridge club at the hotel when they were kidnaped. Miss Galbreath, incidentally, is the daughter of Robert Galbreath, who discovered Glenpool field in Oklahoma in 1906.

HUGH ROY CULLEN, independent operator of Houston, was honored with an honorary degree of doctor of science by the University of Pittsburgh on June 10. Cullen was honored as a pioneer in the oil industry, and for his discoveries of production that have been of material aid to the growth of the industry.

REX WATSON, who has been division engineer for Humble Oil & Refining Company at San Antonio, has accepted the position of chief petroleum engineer for Lago Petroleum and Transport Company at Maracaibo, Venezuela. On June 6, Watson married Miss Elizabeth Colgin at Waco, Texas, then left for New York where he sailed on June 10. Engineers Jimmy Posgate, Lee Webster, John Bell, Paul Turnbull, Hulin Kemp and Jon R. Long sponsored the groom.

TOM PEW, vice president of General Crude Oil Company of Houston, is making an inspection tour of the company's producing properties.

R. P. BOLTON of London, England, geologist and engineer, announces removal of his offices from Byron House, St. James Street, to 68 Pall Mall, London, SW 1.

JACK DANCIGER, vice-president Danciger Oil & Refineries, Inc., Fort Worth, departed last week accompanied by members of his family for a vacation in California.

ROY B. JONES, founder of The Panhandle Refining Company, Wichita Falls, Texas, will be honored at a banquet on June 20, which will celebrate the company's twentieth birthday. The banquet is being sponsored by a group of oil producers and refiners of North Texas, with M. W. Blair serving as chairman.

CYRUS H. McCORMICK, retired chairman of the board of International Harvester Company, died June 2 in Lake Forest, Illinois, following a heart attack last Saturday.

He was born in Washington, D. C., May 16, 1859, the eldest son of Cyrus

Hall McCormick, inventor of the reaper. In 1884 the son succeeded to the presidency of the McCormick Company. In 1902 the McCormick Company united with others to form the International Harvester Company, and McCormick was elected the company's first president. He served as chairman of the board from 1918 to September, 1935.

At the time of his death he was a trustee of Princeton University and of the Field Museum of Natural History, and a director of the Presbyterian Theological Seminary. He was awarded the honorary degree of A.M. by Princeton University in 1887 and that of LL.D. by Lafayette College in 1915.

During the World War he served as a member of the committee of management of the Y.M.C.A. in Paris. In 1917 he was selected by the United States government as a member of a special diplomatic mission to Russia.

WILSON KEYES, 35, consulting geologist and operator with headquarters at Midland, Texas, was instantly killed June 6 in an automobile collision near Midland. E. S. McLaughlin, consulting geologist, who recently moved from Wichita Falls to Midland, was a fellow passenger, and received serious injuries. Keyes participated in the ownership and completion of three semi-wildcat oil strikes in as many counties in West Texas since the first of the year. He began work in the district in 1923 as a geologist for Transcontinental Oil Company and later was district geologist for Simms Oil Company.

OIL SCHOLARSHIP

AUSTIN.

AN offer made by Shell Petroleum Corporation through T. E. Swigart, Houston, vice president of that company, of a $600 annual scholarship to be given to some student in petroleum engineering at The University of Texas has been accepted by the Board of Regents of the institution. In announcing its acceptance of the gift the board expressed to Swigart and Shell Petroleum Corporation its appreciation of this manifestation of the interest which the donor has in the work that the University is doing in training men along scientific lines for the petroleum industry.

The results which the departments of petroleum engineering, geology, chemistry and physics are accomplishing in the matter of equipping young men of Texas for positions in the various phases of oil operations are attracting wide attention on the part of men connected with the industry, it is stated by persons who are familiar with what has been and is being done along these scientific lines at the University.

The new scholarship is available for the 1936-37 long session.

RATE HEARING

AUSTIN.

A HEARING to fix rates on petroleum and petroleum products from Gulf Coast ports to points in the Rio Grande Valley of Texas has been scheduled by the Texas Railroad Commission for June 17 at Austin.

Brownsville complains that the low rates now in effect are intended to reduce the movement of oil through Brownsville and to divert shipping to the railroads.

Outlook Better

WORLD OIL PICTURE THROUGH SHELL REPORT ENCOURAGING

"WHEN increasing production is attended with a considerably greater demand, and when at the same time persistent efforts to keep the production within reasonable bounds have met with more success than in the past, a somewhat sanguine feeling is not out of place."

That optimistic statement was signed by H. W. A. Deterding, general managing director, and J. E. F. De Kok and J. B. Aug. Kessler, managing directors, of N. V. Koninklijke Nederlandsche Maatschappij Tot Exploitatie Van Petroleumbronnen In Nederlandsche-Indie (Royal Dutch Company for the Working of Petroleum Wells in the Netherlands Indies) in the report submitted by the management to the board of commissaries.

The Royal Dutch organization is so widespread in its activities that a report of the company's conditions in various countries is regarded in some quarters as a fairly accurate picture of oil industry conditions throughout the world. Highlights from the report, released for publication June 10, follow:

"Generally speaking the year 1935, in comparison with the very bad years which preceded it, may be said to have shown some improvement in the economic situation."

Regarding world production figures, the report says:

"The year 1935 exceeded the record, which had so far been held by 1929, by more than 16 million metric tons, or upwards of 7 per cent. The United States, with 134,980,000 metric tons, had the lion's share in this production, whilst approximately two-thirds of the total increase in 1935 is also for their account. At the same time, however, consumption in the United States rose to such an extent that the greater part of the increased production was offset by increased home consumption, and the remainder, which was exported, did not exceed what the importing countries could absorb. This goes to show that the efforts of the American producers to stabilize the oil industry yielded more tangible results than in past years.

Russia No Threat

"Although production in Russia increased somewhat, as a factor in the international oil market this country is steadily losing ground and can hardly be regarded as a rival there any longer. This is apparent from the important decrease in the amount exported, which was still upwards of 4 million tons in 1934 and fell in 1935 to somewhat more than 3 million or by nearly 22 percent. By dint of increasingly reckless drilling they succeed now and then in effecting a slight augmentation of their production, but new prospects do not seem to be opening up and increased industrialization is the order of the day.

"Iraq production, which at the end of 1934 began to flow through the completed pipe lines of the Iraq Petroleum Company, Ltd., in 1935 became for the first time a factor of importance. With a production of 3½ million metric tons this company, in which we are interested to the extent of 23¾ per cent, has not yet reached the full capacity of its lines, which are capable of conveying 4 million metric tons a year. The fact that notwithstanding this new important producer prices in 1935 remained appreciably better than those of the preceding year cannot be construed otherwise than as an indication that the world is recovering somewhat from the depression of the past five years.

Import Tax Scored

"Unsound is the tendency for governments to try to balance their shaky budgets by taxing imported petroleum products beyond all the bounds of reason. This unreasonable burden has already retarded the increase of consumption here and there, and in some few countries has even led to a reduction of the consumption.

"Although these taxes were everywhere levied for the purpose of increasing the state revenues, of late years there are various indications that these burdens are often of a protectionist rather than a fiscal nature. Their object is then to promote the production of synthetic motor spirit and petroleum substitutes (including alcohol, for the purpose of supporting agriculture) which are many times dearer than the better, more suitable and inexpensive natural products. These products can only be made if the manufacturer is heavily subsidized, at the expense of the taxpayer.

"According to the latest figures our production in various countries amounted to:

	1935	1934
	metric tons	
Netherlands East Indies.	4,271,401	4,478,706
Sarawak	261,188	285,834
Seria (Brunei)	467,934	387,972
Egypt	176,436	214,671
Roumania	1,540,117	1,701,054
Mexico	3,148,456	2,451,478
Venezuela		
Caribbean . . .	2,275,696	2,212,362
V. O. C.	5,496,557	5,228,763
Colon	697,194	727,435
Trinidad	191,204	148,933
United States		
(Shell Petr. Corp.)	3,799,120	3,256,829
(Shell Oil Comp.)	3,041,240	2,292,203
Argentina	453,975	476,915
Iraq	799,501	214,857
	26,620,019	24,078,012

"As these figures show, our production during the past year—apart from

[*Continued on page 78*]

Oil Is Reviewed

HISTORY OF TEXAS INDUSTRY IS PRESENTED AT CENTENNIAL

DALLAS.

THE opening of the Texas Centennial Exposition in Dallas on June 6, brings to the foreground of public consciousness, the million dollar efforts of the nation's major oil companies to stimulate a greater interest—a keener knowledge of the industry as a whole and the production in Texas fields in particular.

Among the more important exhibits found on the 188-acre Exposition plant are those of Gulf Refining Company, The Texas Company, Sinclair Refining Company, Continental Oil Company, Humble Oil & Refining Company, Magnolia Petroleum Company, Pennzoil Company, and other associated concerns. Of chief interest from a spectacular or "show" standpoint, the visitor will find the Texaco "History of Texas Oil," the Conoco Guest House, the Gulf Radio Station, Sinclair's epic of the centuries-old gradational evolution of oil in the bowels of Mother Earth, and Humble's hall of history, heading the list of attractions.

Humble Oil & Refining Company depicts a graphic story of the history of oil in the Lone Star state through a series of oil field dioramas, relief maps and photo murals. In addition to the history of the oil industry it tells the stirring story of Texas' war for independence and outstanding features of Texas life from the time of the Spanish padres to the settlement of the cattle ranches in the western part of the state. Humble's Touring Service occupies a large section of the space.

Four reproductions of typical oil fields in miniature present a picturesque view of East Texas, Powell, Spindletop and Big Lake fields. These show the surface, and, in cross section, the underlying strata of the earth. Miniature derricks and tanks stand at the exact location of every one in the field. Sunk in the center of the floor are eight relief maps of the state of Texas. Three of these are historical in nature, while three show Texas as it was geologically 250 million years ago, 125 million years ago, and 50 million years ago. Another is an areal map of Texas today, and the other a structural geological map of modern Texas.

Photo murals adorning the wall tell the complete story of oil. Featured in the historical section are 14 dioramas of historic events during the 100 years of Texas independence. The entire exhibit at the close of the Centennial will be presented by Humble Oil & Refining Company to the University of Texas as a permanent exhibit in its gigantic new Memorial Museum.

A $100,000 building of The Texas Company's houses its "History of Oil" diorama, an exhibit showing oil in every phase of its production, from the time the well is drilled, through the various stages as crude oil, refined oil, how marketed, sold, transported, and the full details of its various uses in domestic markets. The history of oil in Texas from the inception of the first field at Corsicana, to the development of that field and every new field from time to time through the years prior to the discovery of the East Texas oil field in 1930, the greatest oil field in the world to date, will be fully explained and presented in terms every visitor will readily understand.

The advancement of the oil industry from its inception as a "baby" industry will be an educational feature few of the 15,000,000 visitors will miss while at the Exposition. Increase of interest in the oil industry is shown by the continued featured space given oil stories of importance in the daily newspapers of the state. The Texaco "History of Oil" will furnish that "first hand" knowledge of how, what and where oil is discovered and produced in Texas.

Continental Oil Company has constructed a $65,000 building known as the Conoco "House of Hospitality" near the entrance gates through which 15,000,000 persons from all parts of the globe are expected to pass this summer. The Conoco "House of Hospitality" will be open daily from the time the gates open until the closing hour. This featured exhibit will be used as a reception hall where visitors may rest, meet others, write letters, eat their lunches, etc.

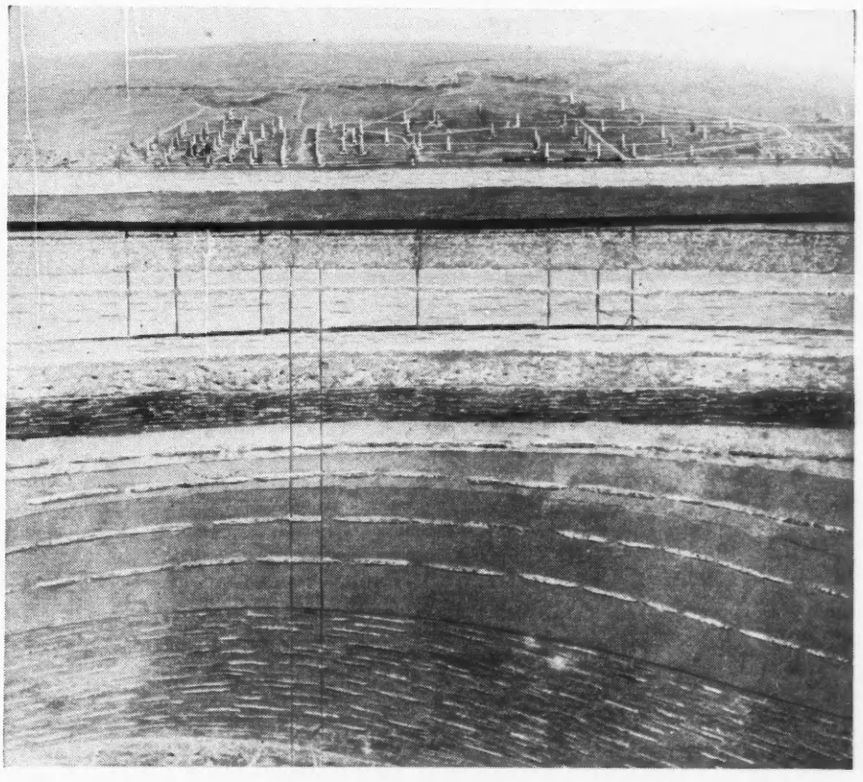
This building will be the chief office of the Conoco Travel Bureau, and literature will be available here from attendants who will give the visitors full information about the Exposition and the Conoco products. The Travel Bureau will be the featured part of the Conoco exhibition as there will be no production or marketing exhibits in this building.

Gulf Refining Company has its general exhibit in the $450,000 Hall of Petroleum. In addition the company will maintain the Gulf Radio Tower, a $150,000 building, from which programs will eminate, both in the building proper, and from various locations spotted over the grounds. The Aerial tower of this gigantic broadcasting station will be unique in that the aerial is self-contained in one mast, instead of the usual twin masts in use at all stations throughout the nation.

The grounds spot broadcasts will be by location-phone-control. A visual operator's room utilizing a huge plate glass wall in order that visitors may see the actual operation of a broadcasting station without interfering with the duties of the operator of the controls, is a feature. A dozen programs may eminate simultaneously. The first big feature of the Exposition, the proposed broadcast of the President's message and official opening of the celebration, the radio interviews of celebrities visiting the grounds, the initial cackle of the first hen to lay an egg in the Agricultural Exhibition Hall, and many other odd and clever features will be broadcast through the facilities of the giant Gulf Tower station, the finest ever built for a world's fair.

Sinclair Refining Company is spending approximately $50,000 in erecting a huge dinosaur exhibit, the featured part of their national advertising program, starting with the process of the formation of oil thousands of feet beneath the present surface of the earth.

Sinclair has worked out an evolution



A miniature of the vast Big Lake field as it appears in Humble Oil & Refining Company's Hall of Texas History at the Centennial grounds.

exhibit of how oil is formed in pockets in the various formations of the productive areas which will prove of general interest to everyone visiting their building. Their theory is that oil is made of the carcasses and bodies of huge animals which once roamed the earth's surface until the time of the coming of the Great Glacier, which changed the entire surface of the northern continent, and this theory is borne out in the general pictorial story Sinclair presents to the world in advertising the Sinclair refined products.

Scientists have been laboring for years trying to discover the original formulae of oil as produced by Mother Earth. This side of the story is the part to be presented by Sinclair to the millions of Centennial visitors in a great building built in the shape of a huge dinosaur. This fact necessitated the manufacture of many huge life-like reproductions of these extinct mammals, and during the transportation of these odd-looking figures over the highways, the appearance of the dinosaurs in their gigantic proportions have aroused the curiosity and admiration of several thousand people in the cities and towns through which these exhibits have passed, en route to the Exposition grounds.

The importance of the oil industry to the world and the contributory factor of oil in upholding peace between the nations will be impressed on every visitor. Methods of finding and producing oil, refining and marketing the commodity in every part of the world, will be a feature of these educational exhibits.

Highest Average

PRODUCTION IN APRIL, SAYS BUREAU OF MINES REPORT

WASHINGTON, D.C.

OPERATING at record-breaking levels, domestic oil producers in April exceeded the 3,000,000-barrel daily average for the first time in the history of the American industry, to make a record of 3,016,000 barrels, according to the monthly report of the Bureau of Mines, issued June 9.

Because of the shorter month, however, the total for April failed by slightly less than 90,000 barrels to equal the March total, output being 90,479,000 barrels against 90,568,000 barrels the preceding month.

"All the important states and most of the others registered increases in daily average production in April," the bureau reported. In Texas, the daily average rose from 1,143,700 to 1,187,600 barrels, as the output in all the major fields increased; daily average in the East Texas field was 477,800 barrels, the highest since last fall. Oklahoma reached the highest daily average since August, 1933, at 574,200 barrels, while production in Louisiana and Kansas jumped to record levels, the daily average in Louisiana being 215,800 barrels of which 50,200 barrels was from Rodessa.

Part of the increase in crude production was absorbed in increased runs to stills, the bureau stated, but stocks of oil continued to increase, nevertheless, and on April 30 totaled 315,389,000 barrels, or 2,200,000 barrels more than on March 31.

"The peak in the demand for fuel oil, particularly that for the lighter grades, was definitely passed in April and the yield of gasoline reacted sharply from the low point reached in March," the report continued. "The average yield of gasoline for April was 44.7 percent, compared with 42.6 percent for March and 43.7 percent for April, 1935.

"Domestic demand for motor fuel in April closely coincided with expectations, the daily average being 1,294,000 barrels, an increase of eight percent over the demand of a year ago. Exports of motor fuel totaled 2,532,000 barrels, materially higher than in the previous month and the corresponding month of a year ago. Stocks of motor fuel turned the seasonal corner, the total showing the first decline since last October. Total inventories of finished and unfinished gasoline on April 30 were 73,509,000 barrels, or nearly 1,000,000 barrels below the level of March 31."

Details of supply and demand for April, compared with previous periods, are given in the accompanying table.

Supply and Demand of All Oils

(Thousands of barrels of 42 gallons)

	April, 1936	March, 1936	April, 1935	Jan.-Apr., 1936	Jan.-Apr., 1935
New Supply:					
Domestic production:					
Crude petroleum	90,479	90,568	78,427	351,987	311,393
Daily average	3,016	2,922	2,614	2,909	2,595
Natural gasoline	3,265	3,378	3,062	13,492	12,523
Benzol[1]	204	185	138	749	586
Total production	93,948	94,131	81,627	366,228	324,502
Daily average	3,132	3,036	2,721	3,027	2,704
Imports:[2]					
Crude petroleum:					
Receipts in bond	371	211	629	955	2,671
Receipts for domestic use	2,486	2,235	1,970	8,849	6,450
Refined products:					
Receipts in bond	1,393	1,465	1,114	4,916	3,868
Receipts for domestic use	620	495	737	2,290	3,649
Total new supply, all oils	98,818	98,537	86,077	383,238	341,140
Daily average	3,294	3,179	2,869	3,167	2,843
Increase in stocks, all oils	2,314	5,561	[3]1,291	9,419	5,390
Demand:					
Total demand	96,504	92,976	87,368	373,819	335,750
Daily average	3,217	2,999	2,912	3,089	2,798
Exports:					
Crude petroleum	3,743	3,155	3,776	13,439	12,230
Refined products	6,282	5,777	4,305	24,532	21,110
Domestic demand:					
Motor fuel[4]	38,825	35,871	36,082	134,324	122,573
Kerosene	3,914	4,098	3,751	18,366	16,606
Gas oil and fuel oil	31,544	34,196	29,636	142,554	126,470
Lubricants	2,197	1,863	1,802	6,976	6,273
Wax	92	84	88	350	296
Coke	483	349	406	2,175	2,166
Asphalt	1,666	989	1,244	4,230	3,157
Road oil	241	260	292	742	717
Still gas	4,366	4,136	3,916	16,437	15,244
Miscellaneous	203	195	167	746	738
Losses[4]	2,948	2,003	1,903	8,948	8,170
Total domestic demand	86,479	84,044	79,287	335,848	302,410
Daily average	2,883	2,711	2,643	2,776	2,520
Stocks:					
Crude petroleum	315,389	313,189	339,793	315,389	339,793
Natural gasoline	5,058	4,553	5,586	5,058	5,586
Refined products	230,672	231,063	224,159	230,672	224,159
Total, all oils	551,119	548,805	569,538	551,119	569,538
Days' supply	171	183	196	178	204

[1]From Coal Division. [2]Imports of crude as reported to Bureau of Mines; imports of refined products from Bureau of Foreign and Domestic Commerce. [3]Decrease. [4]Beginning January, 1936, natural gasoline losses are included in motor fuel demand.

TEXAS PRODUCTION

1,162,370 barrels daily produced during April

AUSTIN.

THE average daily production in Texas for the month of April was 1,162,370 barrels, according to a report released by Olin Culberson, chief of the oil accounting bureau of the Texas Railroad Commission.

The allowable for the period was 35,678,164 barrels, or 1,189,276 barrels per day. The total allowable for April exceeded the indicated production by 807,164 barrels, or 2.26 percent.

Operators reported production from 12,496 separate leases, and the allowable was distributed among 61,851 producing wells, of which 37,278 were pumpers and the remainder flowing wells. The number of producing wells increased 778 during the month.

Storage increased from 3,791,385 barrels to 3,920,553 barrels, a total gain of 129,168 barrels for the month. Producers reported they ran 34,374,590 barrels to pipe lines, and the pipe line companies reported receipts of an additional 105,413 barrels.

Tank car movements totaled 63,219 barrels; there were 106,443 barrels moved by truck; 44,264 barrels were used for fuel, and 21,725 barrels were diverted to miscellaneous uses.

Townlot Drilling Rush

INTERESTING OPERATIONS ARE BEING PERFORMED AT OKLAHOMA CITY

By BRAD MILLS, Associate Editor

THE delayed development of the north end of the Oklahoma City field, now under way with a rush and intensity that rivals any previous attempt at townlot activity, is being carried out in the face of a formation pressure that averages less than one-fifth of that shown by the south end of the field during its early development period. Experience has shown, however, that the relationship of pressure to a large flowing production is not so close in this field as in fields having a tight producing zone and a low gas/oil ratio.

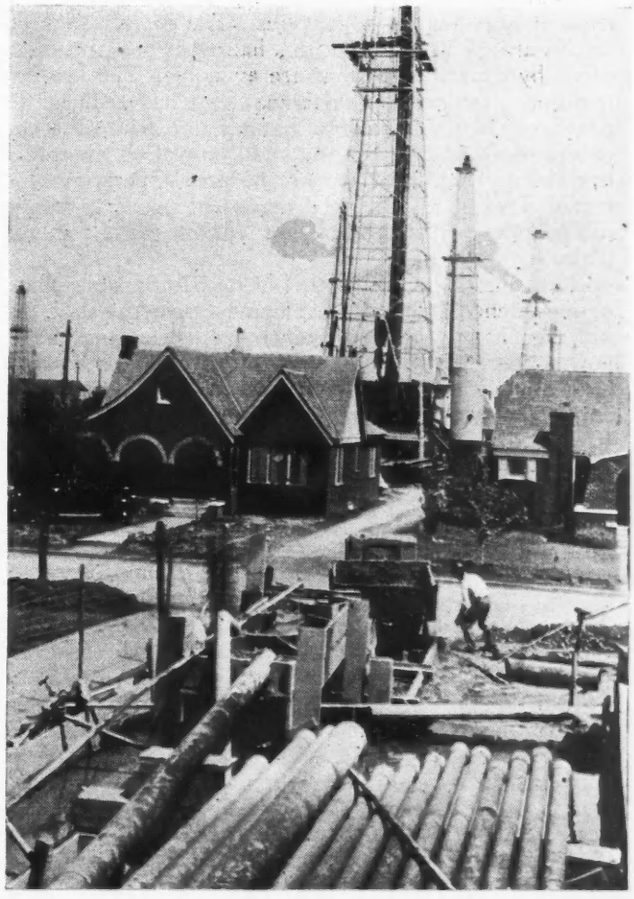
The opening to drilling of a strip about 8000 feet long and 3000 feet wide has resulted in a drilling campaign that may know no limits until the field is defined on all sides, with the possible exception of the downtown section. About 30 wells have been completed, more than 100 wells are actively drilling, and 30 derricks and locations soon will fall into the drilling column. Derricks have sprung up so rapidly that the entire section under development shows few gaps.

The general rule calls for one well to each city block, but some exceptions have been noted. The property owners in each block form a community lease, and the drilling is done by the company that is the successful bidder for the lease. The well in each block usually is located near the center of the small tract, but the presence of a vacant lot or the position of houses in the block may influence the location of the well. Where no vacant lots are available, it has been necessary to remove one or two houses to make room for the derrick, mud pits, prime movers and casing racks. Parts of three or four lots usually are utilized, since the average lot owner does not hesitate to lend whatever space he can spare to facilitate drilling operations. The derrick, mud pit, power units and storage tanks are widely scattered in each block where room commands a premium. Most of the lot owners are very patient and contribute liberally to the cramped quarters.

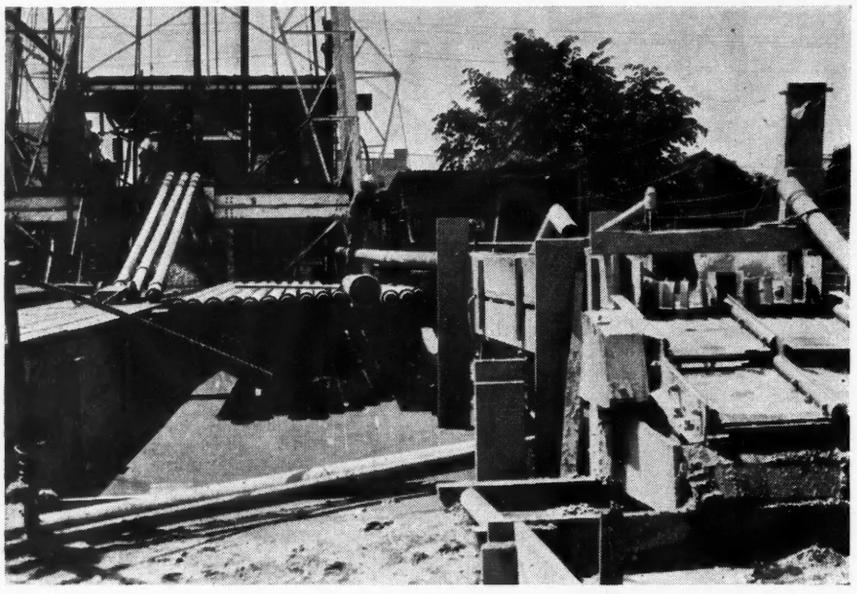
The low average bottom-hole pressure in the first completions in the north extension reflects the effect of drainage toward the south end of the field. During the late stages of development in the northermost section of the south end of the field, many wells established high potentials after showing a low bottom-hole pressure. The recollection of those high initial flows and the satisfactory performance of the first north end completions have encouraged operators to start a large number of wells that are expected to come in as flowing producers in a very low-pressure area. Many wells now under way undoubtedly will be completed as non-flowing producers, but the possibility of a pay-out over a long artificial lift period has intensified activity on flank lots, where the advantage of early completion is obvious.

The jump of more than a mile across part of Oklahoma City to pick up that portion of the field that has escaped development because of restrictions has changed a nice residential section and the capitol area into a noisy center of oil field development that will affect permanently the appearance of the locality. The State of Oklahoma has joined the procession in a big way, and with five drilling wells along the narrow state strip, seems determined to recover as much as possible of the oil in place under its property along the south end of the north extension. Participation by the state in the townlot development apparently has eased the conscience of many civic-minded citizens who have helped to bring about drilling in a section of the city that was at one time ragarded as simon pure.

Operations on the north side at Oklahoma City finally



An oil well in the back yard soon will become a reality in this part of Oklahoma City.



Triple use of space is shown on this small lot. The drill pipe rack and mud ditch are built over the slush pump.

has resolved itself into a cold-blooded business proposition. The field extends under the city to a point far north of the state capitol. Development of several blocks paralleling a row of restricted blocks that also overlie the oil accumulation has not appeared fair to owners of property in the restricted blocks. The result of spotted development has been a sharp agitation that has broken down the barriers to drilling in sections of the city that probably will prove very productive. Many property owners are becoming reconciled to the noise and muss, the thought of a nice royalty income having overcome the early objection to such townlot development.

Although drilling in a large city presents many problems, it also has its advantages. The danger to property is always present, but this hazard is to some extent offset by conveniences that are available. The low bottom-hole pressure at Oklahoma City has reduced the possibility of a blowout to a minimum, while the care exercised during drilling-in and completion operations has almost eliminated the fire hazard. Operating companies have exceeded the demands of property owners in efforts to drill to completion without cause for complaint.

Noise has been one of the most objectionable phases of the intensive townlot development near the state capitol. A mixture of steam, gas engine, Diesel and electric power gives a variety of noises that has been lessened by the application of all types of mufflers and suppressors. The electric motors make little noise, but the electrically driven drilling outfits are almost as noisy as those driven by steam or Diesel powers.

In an effort to reduce the noise caused by exhaust steam, several operators install the gas and oil separators at the time drilling is started. The exhaust steam from the drilling engine and the mud pumps is passed through these separators, which serve as large mufflers. The arrangement not only reduces the noise of the escaping steam but saves a large part of the condensed water. Several types of mufflers are used on steam lines and all do some good. Ordinary steel drums are being used as mufflers on many high steam exhausts. Mufflers are being used on gas engines and Diesels, the result comparing favorably with the noise from a large truck. Little has been done to reduce the noise on the derrick floor, and with more than 100 wells racing for the producing zone, this phase of field operations is accounting for the bulk of the objectionable noises. Residents of sections of the city that oppose extension of drilling privileges point to this noise as a good reason for their stand against townlot development. The drilling at Oklahoma City represents the first effort at noise control in townlot activity. Although a sincere effort is being made to develop the north end of the field in a quiet and orderly manner, the general appearance and sound does not betray the nature of operations. The state capital, long regarded as a quiet spot, is located in one of the noisiest sections, the state's own wells being among the worst offenders.

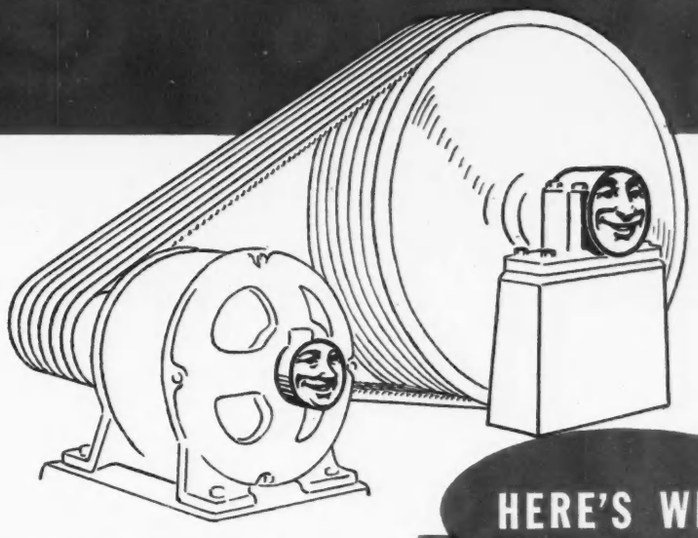
The significance of the north end development at Oklahoma City is difficult to determine. The producing zone shows its full thickness, the accumulation is fairly uniform, the gas volume indicates a good reserve flowing energy, the percentage of water is low, and the productive acreage probably will be large enough to establish a potential that will affect the allowables in all Oklahoma fields.

The low formation pressure is the real weak point in the delayed development program that otherwise might throw the petroleum industry seriously out of balance in Oklahoma. Although good wells have been completed with a bottom-hole pressure that should not flow oil from 6500 feet, it is not reasonable to suppose that a large natural flowing production can be maintained with a pressure that must decline rapidly as new wells are completed and placed on production.

The remarkable potentials shown by a few new wells completed in the north end of the field couldn't have been established in any other field producing from a comparable depth and with an equal bottom-hole pressure. A few wells that established potentials of 12,000 to 20,000 barrels did not have a bottom-hole pressure above 500 or 600 pounds. Under less favorable conditions and in any field producing from a tight sand, no natural flow would have been obtained.

Wells in the Oklahoma City field derive their flowing energy from the formation pressure and the large gas volume that is so important at this stage of development. Although the north end of the field shows the effect of a decided drainage toward the south end, the heavy gas blanket on top of the producing zone has partly withstood the "pull" of almost a thousand wells on the south end of the field. Fortunately for operators now developing the north end of the pool, the top gas did not break

DAYTON COG-BELTS ARE EASY ON BEARINGS



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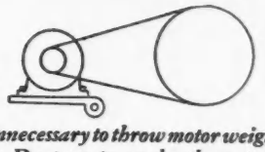
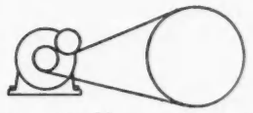
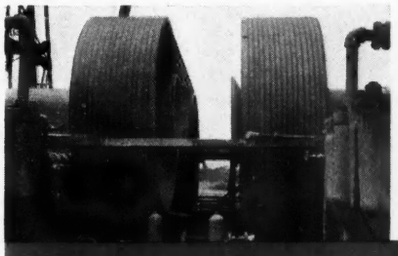
HERE'S WHY

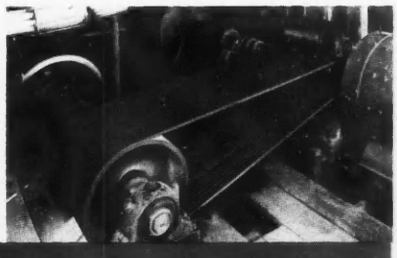


Unnecessary to throw motor weight on Daytons to make them pull.



Nor are troublesome idler pulleys needed with Daytons.





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through during the past three or four years at a rate that dissipated its full flowing energy or volume.

The drilling of a large number of wells on the north end of the pool has reversed the drainage, with the heavy flow of top gas responsible for the energy that gives a large potential with a low bottom-hole pressure. The Wilcox sand, producing zone at Oklahoma City, is very porous and gives up its oil readily.

During the late stages of development in the south end of the field, flowing wells were completed in areas that showed remarkably low bottom-hole pressures. The porosity of the Wilcox sand and the large gas volume gave high potentials where the bottom-hole pressure did not warrant a natural flow of any kind. The same condition prevails in the north end, where the hope of flowing production offsets the realization that some form of artificial lift may soon be in order.

Drilling conditions in the north end of the field would not differ radically from those encountered during the earlier development period toward the south, if it were not for the anxiety and rapid drilling that is accompanying townlot operations. The race to reach the producing zone with more than 125 wells has created a shortage of good surface equipment and drill pipe, particularly of the type that should be used for such heavy service. An extremely varied assortment of equipment has been assembled from Oklahoma, Texas and Louisiana, and the poor time averaged by a few operators should be attributed as much to inadequate equipment as to difficult drilling conditions.

Twisted drill pipe strings and kellys have given a great deal of grief, but no satisfactory explanation for the trouble has been advanced. When pulled, the drill pipe has shown bends and waves that indicated an extreme form of vibration. Twist-offs have occurred frequently, and more than half of the drilling wells in the north end of the field have reported drill pipe trouble of some kind. Pipe straighteners have been used with some success, but a recurrence of the trouble has increased the cost of drilling operations. New drill pipe strings have been run in a number of wells, but the change did not eliminate the trouble.

The twisting of the drill pipe is believed to have been caused by vibrations that start at or near the bottom of the string, and possibly at a point near the top of the string. These vibrations become more severe as they travel upward or downward, and at their meeting point, which usually is about 1200 feet from the surface, a severe twisting action takes place that either bends or breaks the drill pipe. Most of the trouble has centered at a point about 1200 feet from the surface. Obviously, the weight carried on the bit and the speed of rotation affects the performance of the drill pipe string. Most of the operators have been carrying more weight on the bit in hard formations than would have been carried in a more conservatively developed field. This excess weight apparently has set up a vibration that became severe enough to twist or snap the heavy drill pipe.

Many companies are using a new type rubber drill pipe protector or stabilizer that almost fills the hole and tends to check the vibration. In a 13⅜-inch hole, the large stabilizers are about 11 inches in diameter, six being the usual number used. The space between the protector and the hole is enough to give full circulation.

In drilling a typical north end well at Oklahoma City, a 20-inch hole is started and drilled to about 75 feet, where the 18-inch surface string is cemented with 80 sacks. A 16-inch hole is continued to 1000 feet, where a string of 13⅜-inch casing is cemented with 650 to 670 sacks. The size of the hole drilled below the 13⅜-inch casing depends on the size of the casing to be run over the oil sand. Most of the operators are cementing 8⅝-inch casing on top of the Wilcox at 6400 feet with 1500 sacks. At least one company has been cementing 10-inch casing in the top of the producing zone, such a size insuring satisfactory potentials.

The average drilling time has been about 60 days and drilling is stopped around 6500 feet. It has been the rule to drill at least two feet into the Wilcox sand, since it is important to cement casing below a thin shale break immediately above the producing zone. Failure to do so might place the shale break below the shoe of the last shutoff string and leave the hole open to water encroachment.

The wells are tested through casing to establish the highest possible potentials, but they are ordinarily produced through 2½- and three-inch tubing. The potentials are determined by multiplying the production of last four hours of a six-hour test by six. The well allowable is 4.5 percent of the potential for Wilcox sand producers. More than 25 wells are due for completion during June.

The full thickness of the Wilcox sand is about 220 feet. About 150 feet of the formation ordinarily is opened, but a few wells have been completed at even lower levels in the north extension. The thickness of the producing zone gives the average well a good chance to pay out if the field is produced at a conservative rate. The oil in place, however, does not justify drilling more than one well to a block, and in several sections even this spacing is too close.

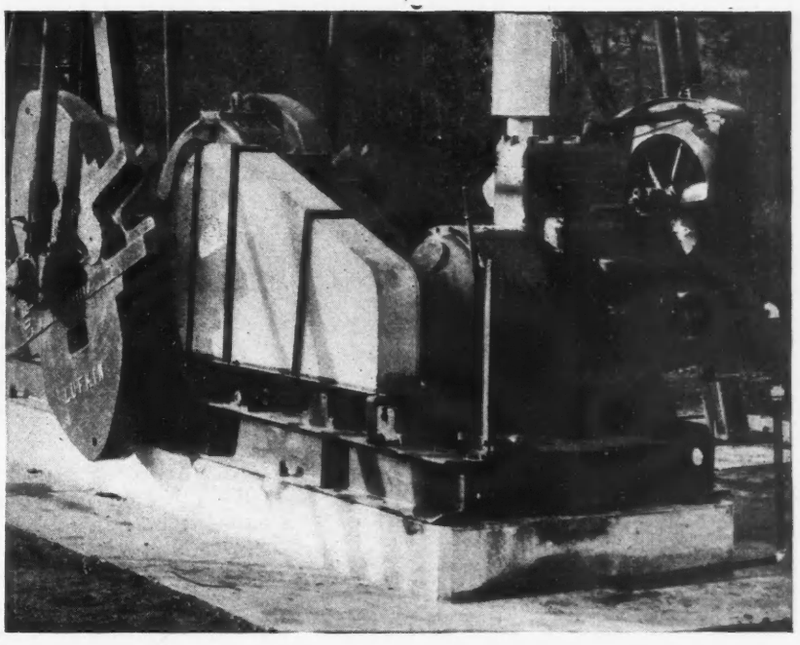
It has long been the custom to complete wells at Oklahoma City without liners or screen, but Superior Oil Company recently ran screen in two wells to protect the hole. Sand has caused more production trouble in the past than any other problem, but the average company has been content to worry with the sand if a larger potential and an uninterrupted flow of oil toward the hole could be maintained. Screen undoubtedly has possibilities, but it is doubtful if the practice of running it to control sand and protect the hole will gain much headway.

The control of gas/oil ratios has aroused considerable speculation, but only limited progress has been made toward that end. The State of Oklahoma has been putting pressure to bear upon operators, but it has been a difficult problem to obtain a true gas/oil ratio of the various wells.

The full value of the gas as an oil producing medium is not fully appreciated by operators who place high potentials above the possibility of a high flowing recovery through reduced production rates. The large gas volume represents the difference between a flowing well and a dead well, and it is very important to conserve the gas in and near the top of the producing sand.

The wells are completed with one or two large separators, and tankage is provided near the wells if possible. The presence of storage tanks and separators constitutes one of the most serious fire hazards, but most of the companies will store as little oil as possible on the small city leases. Several large tank batteries have been built on a long string of city blocks that had not been developed for residential purposes.

All wells are being drilled-in under pressure. In addition to keeping the wells under control during the completion period, the circulation with oil eliminates contamination of the porous producing formation and gives an accurate log of the oil sand. Use of pressure equipment has almost removed the possibility of a blowout, although it should not be difficult to keep the wells



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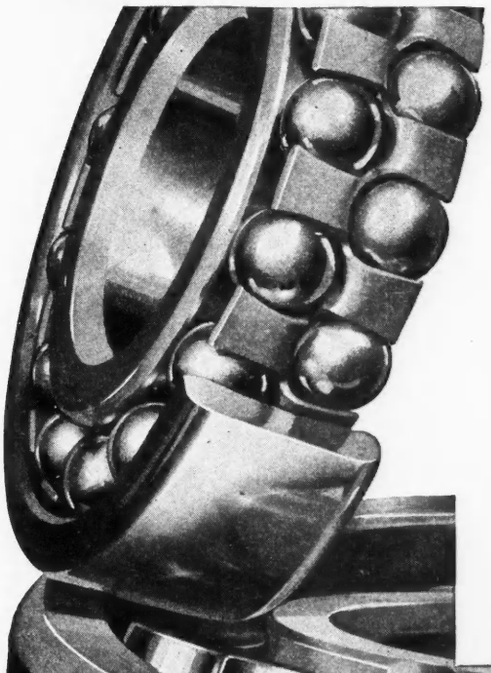

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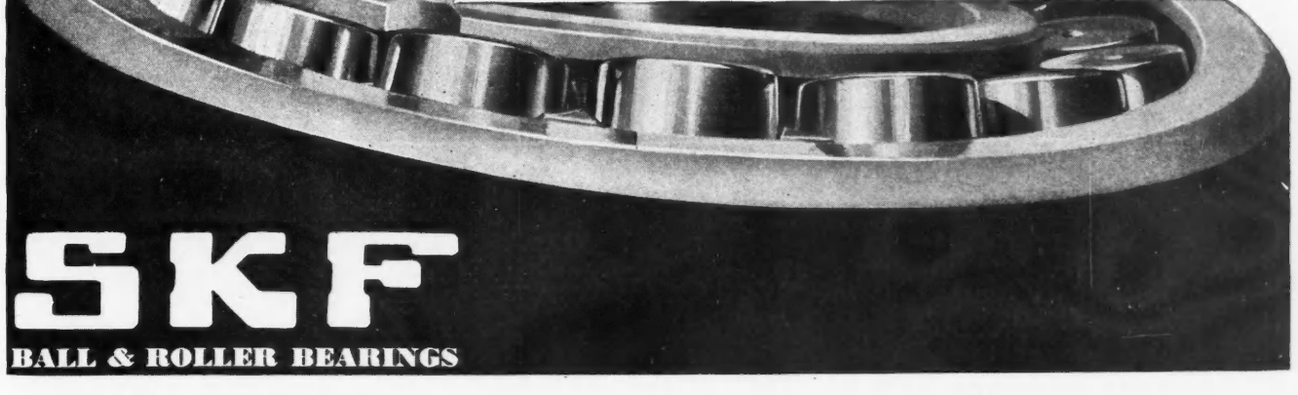

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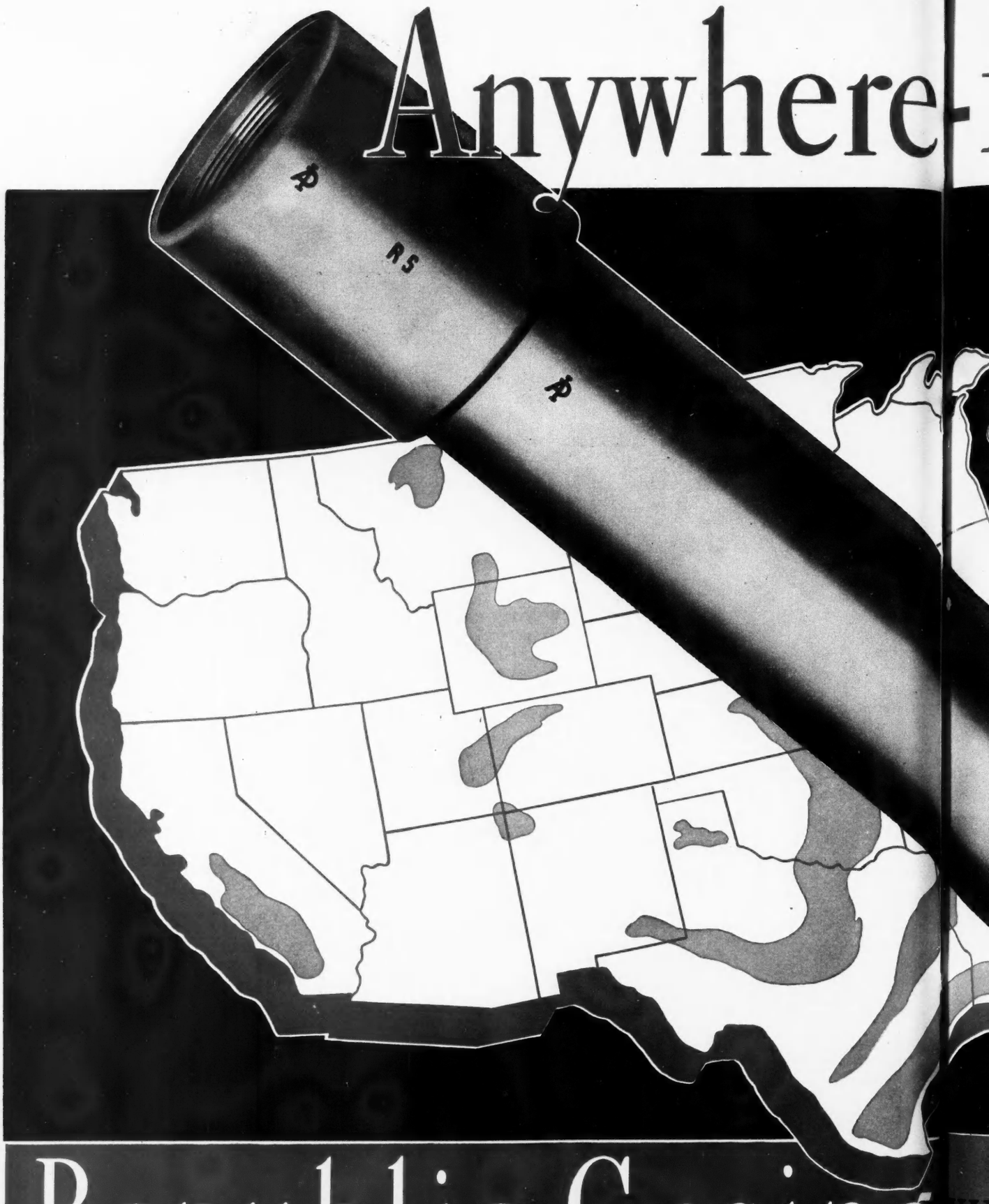

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under control, because of the greatly reduced formation pressure. Tests have shown that drilling in the formation with oil is much easier than drilling with mud. For some reason, use of ordinary mud seems to harden the Wilcox sand in the north end of the field. One company attempted to drill in its first well with mud, but found that the action of the drilling fluid on the formation tended to toughen it like cement.

The original bottom-hole pressure at Oklahoma City was about 2600 pounds. The decline in the north end of the field to 400 to 600 pounds has been brought about by development that did not profit owners of property in the north end. It is reasonable to suppose that the original bottom-hole pressure and oil in place in the north end of the field compared favorably with that in the south end. If such an assumption is true, the present development seems justified.

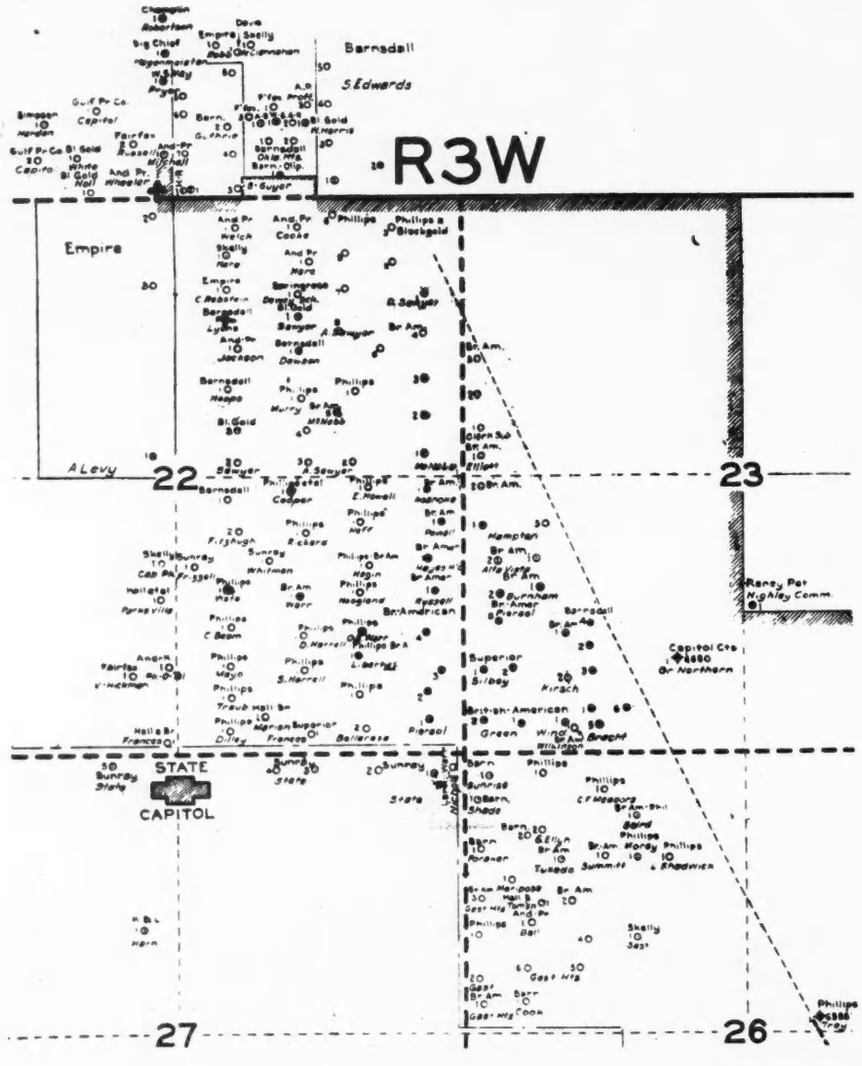
Much of the drilling equipment is new and heavy enough to do the job well. The prime movers include several types of power assemblies, of which a few are new in design. The steam pressures range from 250 to 350 pounds and from three to five boilers are used. Most of the steam drilling is being done with the 12x12 twin type engines. Gas-electric, Diesel-electric and straight Diesel powers are being used, one gas-electric installation being automatic to the extent that the speed of the engines is controlled by power requirements. One drilling rig is powered with two 350-horsepower gas engines that drive large generators for the drilling and mud pump motors. Steam power is holding its own against other types of power, the various operators having been influenced in their power selection by the surplus stocks on hand in other fields and by fuel and water requirements. Diesel installations and purchased electric power are playing parts in the development in the most congested areas.

Six-inch drill pipe is standard equipment, a good grade being required to withstand the abuse given during rapid drilling of hard formations. Most of the formations below 3000 feet are very hard and a large number of rock bits are required. The drilling lines, traveling equipment draw works and mud pumps are the types used in drilling other deep fields. Only steel derricks are used.

In the congested areas, the mud sump is located under the casing rack. It is necessary to utilize all space and double and triple use of space is common. A small inventory of drill pipe and other equipment that can be obtained on short notice has reduced the requirements for space on small lots.

The scarcity of water at Oklahoma City caused the city to shut off the water supply to the field during the spring months. Several operators developed their own water supply by drilling wells to 500 and 700 feet on lots that now are under development for oil.

Will most of the wells completed on the north end at Oklahoma City pay out? This is by far the most important question to all operators, although their long-range viewpoint has been clouded by the desire to get wells on production for the immediate future. It is reasonable to suppose that wells completed with a large flowing production will prove profitable, but the flank completions that show only a partial saturation and some water never will pay out. With more than 200 feet of sand thickness and one well to a city block, or about 2½ acres, it is believed that the inside wells will not prove a bad investment. When calculated on a straight acre-foot basis, the oil in place looks attractive, but dissipation of the gas energy may require an expensive lift effort that will spoil the profit over a long production period.



Map of the new North or Mansion area at Oklahoma City.

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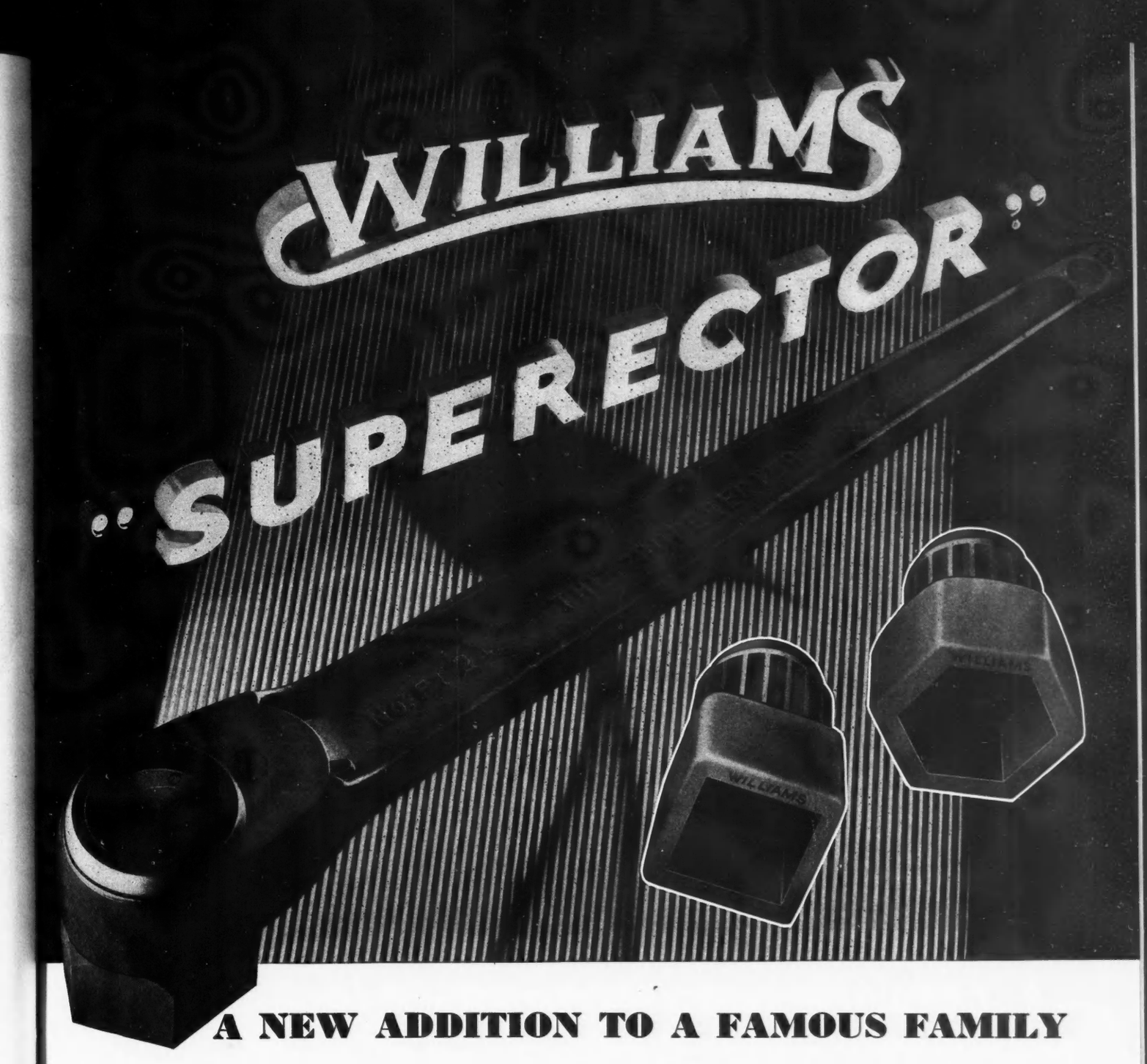

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Cargo Hose Care and Maintenance

ABUSIVE HANDLING WILL RESULT IN PREMATURE SERVICE FAILURE

By GEORGE K. BEDUR, Engineer Hose Division,
The B. F. Goodrich Company, Akron, Ohio

IN the not too distant past, oil producers thought the most efficient method to transport crude and its products was by pipe line. However, when prices dropped and savings had to be made, the industry turned to water transportation as an economy measure and it has enjoyed a steady and sustained growth ever since.

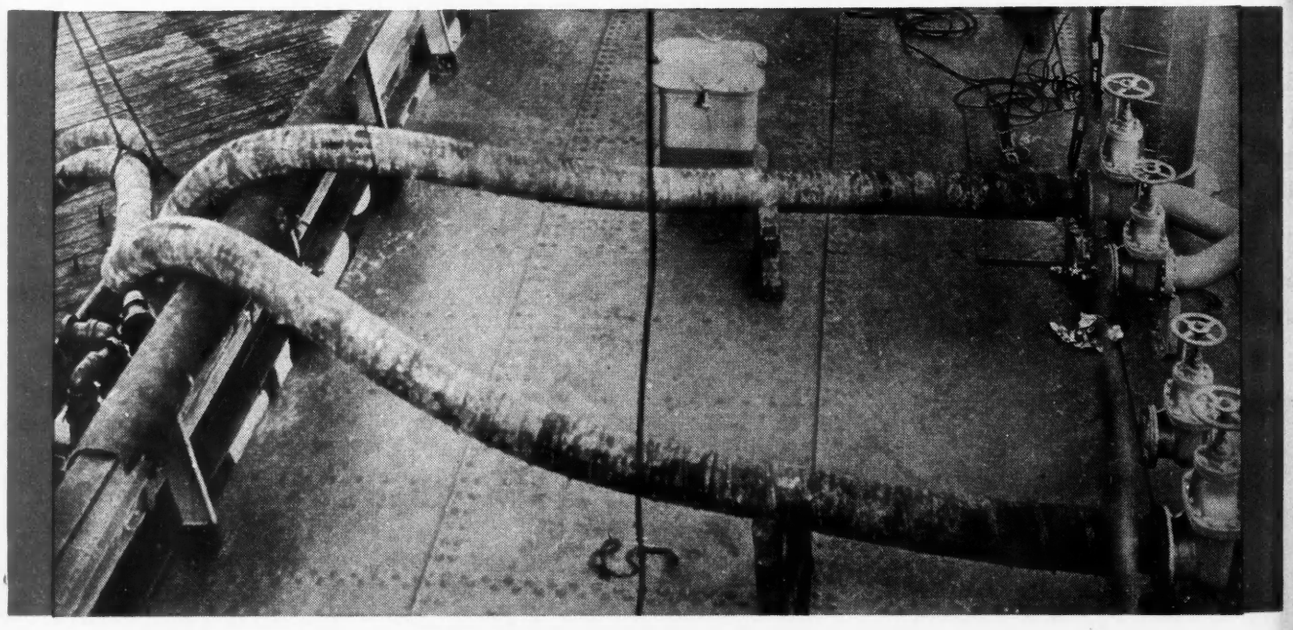
During 1935 more than 50 percent of all refined products, in addition to 25 percent of all crude, traveled by water. Pipe lines carried approximately 750,000,000 barrels but it is expected that this figure will show a material decrease during 1936. Roughly, water transportation has increased about 25 percent per year and its cost is from 15 percent to 25 percent lower than rail. In some cases these figures exceed this differential due to competition among carriers.

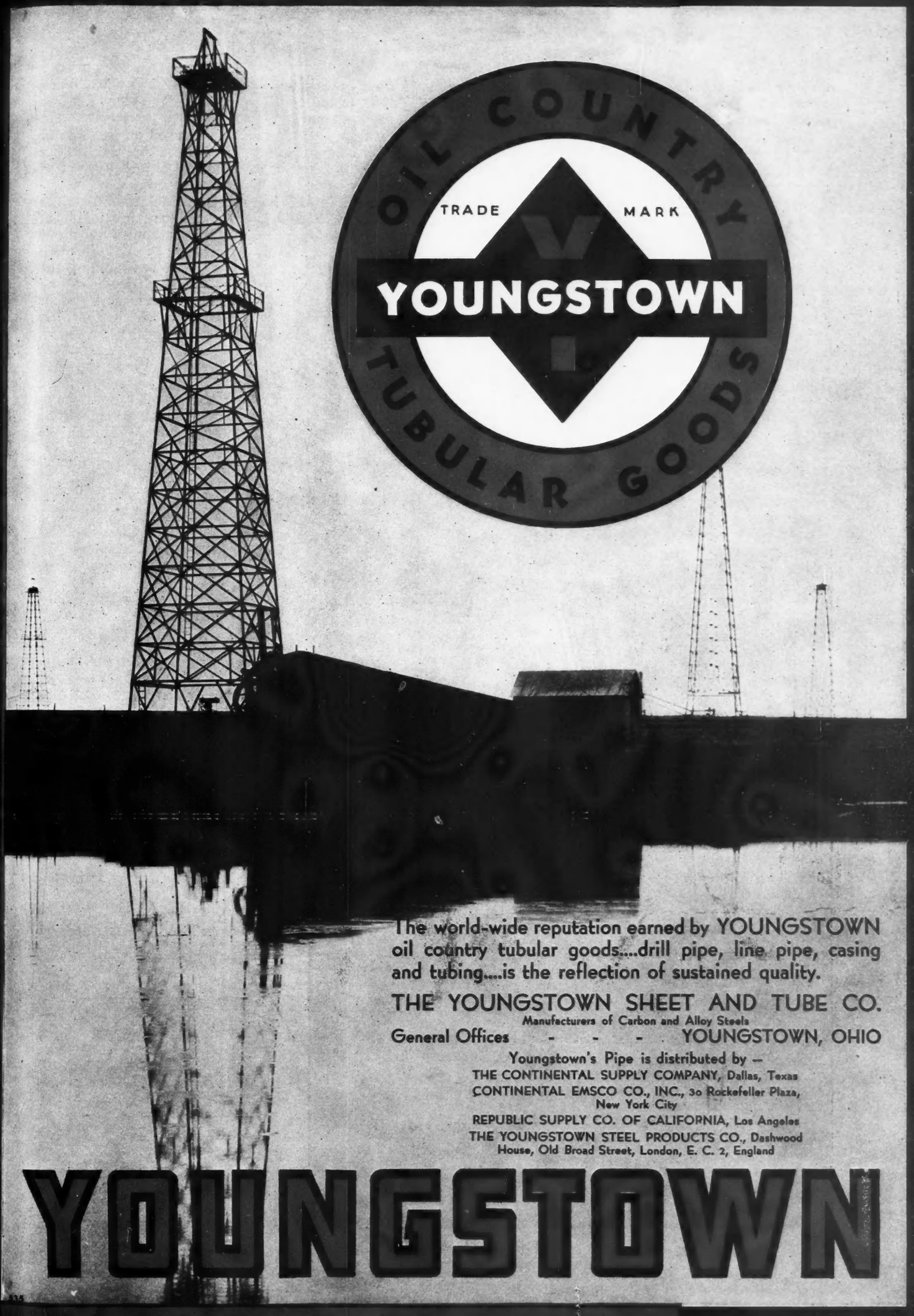
Some companies, due to location of production and refineries, have always maintained fleets of tankers but the majority depended upon pipe lines and used tankers for export or coastal service only. As a result of this rapid changeover to water transportation, many producers are faced with a new set of equipment problems, one of which is that pertaining to the care and maintenance of cargo hose.

The only means of connecting ships or barges to docks and manifolds is by the use of hose. Such hose must possess exceptional strength and be fabricated to not only withstand internal working pressures but resist crushing and collapse as well. Needless to say, this hose should be constructed of the best and strongest materials available and receive the most careful attention from the standpoint of both design and manufacture.

The history of oil and gasoline cargo handling shows that millions of dollars in damage has resulted because hose was mishandled and abused in service or was of improper construction and design. Due to the hazard involved in handling these products, hose must not only be of proven construction but properly cared for so as to guard against premature failure. The cost of first-grade cargo hose as

Use of wooden saddles on deck furnishes proper support for hose. Note covering placed between railing and hose to prevent wearing action.





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an individual item is generally classed as expensive. However, figures show that it is less than one-third of the power cost for operating the loading pumps.

Careless and inefficient handling of hose can, in part, be attributed to the limitations of present day dock facilities. A great majority of the loading docks now in use were built without any anticipation of this tremendous growth in water transportation. As a result, they are too small and generally undermanned and under-equipped for the volume of work at hand. In their efforts to reduce loading time to a minimum, it is an easy matter for these hard pressed dock crews to disregard or overlook those factors which make for prolonged hose life and, in the long run, greater loading efficiency.

The dock superintendent and crews should at all times be familiar with the age, general condition, service hours, etc., of every length of hose on the dock. Hose should be hydrostatically tested with water in excess of working pressure at least every two months. A large user of oil hose uses the following program on tests:

> When new hose is received, it is tested to 250 pounds. Every two months and until 1000 hours of service are obtained, the hose is tested to 200 pounds. After 1000 hours, it is tested to 150 pounds at the same intervals and until 2000 hours are reached. When hose has 2000 hours, it is tested to 100 pounds at the same regular intervals until it is no longer fit for service.

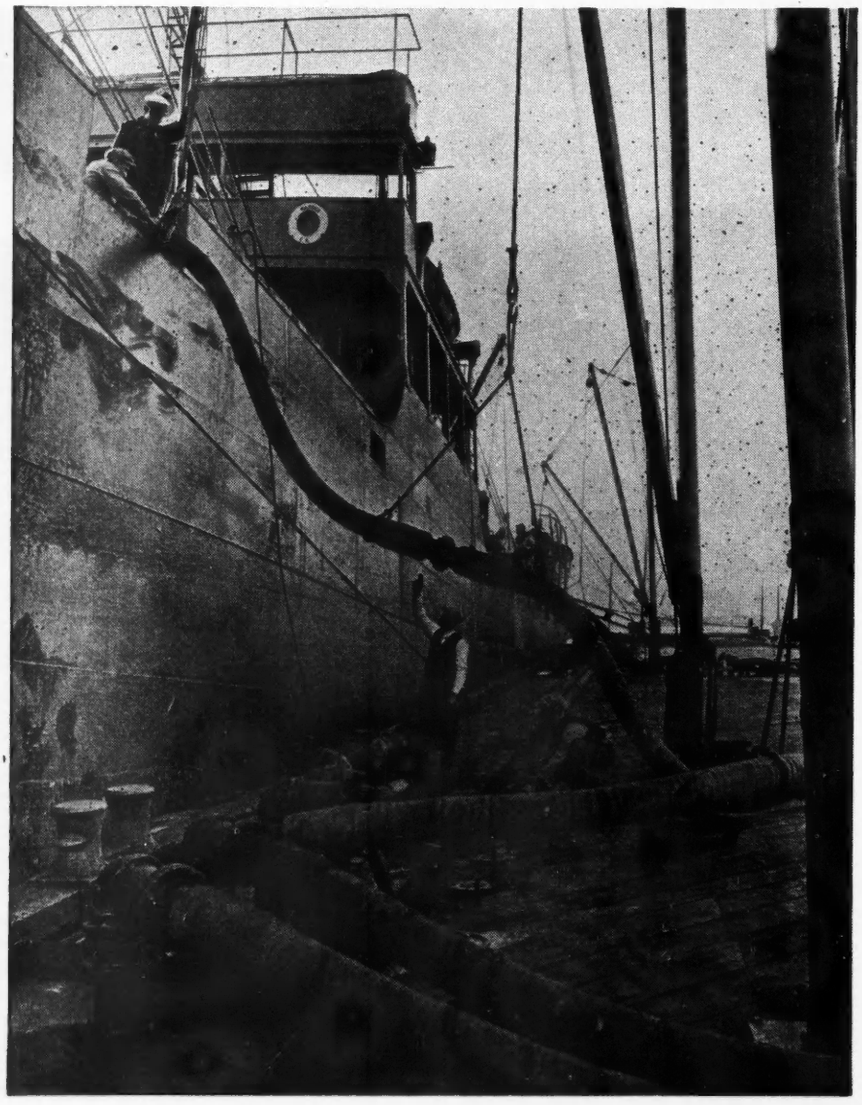
New hose should generally be used on gasoline or light oil and at higher pressures. As the service hours pile up, the hose should go into heavy oil or crude service and on lower pressure lines.

In handling the hose on the dock, small dollies or trucks with wheels or casters are invaluable in supporting the hose or moving it about. Objections to hose weight and stiffness are generally fostered on docks where suitable equipment for handling the hose is not in evidence or where dock facilities and space are constricted. Two or three men with proper equipment can handle hose more efficiently than twice this number if proper equipment is not at hand. Docks with plenty of room are many times more efficient than those which are narrow and crowded for space. Considerable care should also be exercised in putting hose aboard ship. When hose is swung aboard in a haphazard manner most anything can happen and yet in doing so practically no time is gained in making a quick connection.

Hose should be properly supported with slings and saddles when aboard ship and all tackle and supports should be closely watched and adjusted when the tanker or barge loads or unloads, as the case may be. Old sections of hose can be used to fabricate slings and saddles which go a long way to protect the hose.

Rope wrapping, whether applied with or without half-hitch, always earns its cost. The rope used is generally ⅜-inch in diameter and is close-spaced. It lends itself ideally to abrasion resistance and prevents cuts and breaks which would injure the hose carcass and cover.

The hose used in this shiploading operation is an important link in the modern water transportation system. A quality hose, which receives reasonable care and handling, will reduce loading costs because of its longer life and increased efficiency.



Use of wheeled dollies and rope slings speeds up loading operations and reduces hose wear.

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Methods of Estimating Underground Reserves

By V. BILIBIN, Baku, U. S. S. R.

PART 3—Conclusion

IN previous installments factors to be considered as well as estimating methods were discussed. These methods are to be used by authors submitting reserves papers to the International Geological Congress in Moscow, next year.

V. Saturation Method

(a) General Remarks

Calculations of reserves by saturation method are made by the formula $S = V \cdot d \cdot a \cdot b \cdot c$, where S is the ultimate production which can be obtained from the given horizon,

V — the volume of the bed, i. e. oil-bearing area times thickness (in cases of sharp angles of dipping of the bed with allowance for this angle of dipping),

a — factor of porosity,

b — factor of saturation,

c — factor of recovery.

Checking this formula by the actual production of any developed horizon and knowing all other factors, i. e. V, d, a, we may determine by the data already mentioned the product of b by c; that is

$bc = \frac{S}{V \cdot d \cdot a}$, where S is the total amount of oil already obtained and equal to the reserve. Taking into consideration the impossibility of determining separately the factors of saturation (b) and recovery (c) by actual data we suggest (for this formula of the saturation method) to take their product as one compound coefficient (x) called by us the factor of efficiency of the volume of the pores or shortly the factor of efficiency.

Thus, this formula takes the following form:

$$S = V \cdot d \cdot a \cdot x,$$

where x is the factor of efficiency.

When estimating reserves by this formula we cannot take any of its factors as a simple quantity but must establish their maximum and minimum.

Basing upon this, we consider that the reserves calculated by this formula (for individual horizon and for oil-fields on a whole) are to be expressed not as a simple quantity but within some definite range, the variations of which depend on the corresponding variations of the factors accepted by us (e. g. the reserve of a certain horizon is from two millions to three millions tons, or the reserve of a certain field is from 30 millions to 40 millions tons, etc.).

As it will be shown later, the accuracy of estimation of each factor, and consequently the range of its variations (efficiency, probable oil-bearing area and so on) depend on the quality of the research work.

The author hopes that in calculating reserves for the International Congress many difficulties in defining individual factors will be resolved and the estimated figures will not have broad limits.

(b) Determining the factors of efficiency

The greatest difficulty in applying this formula to the estimation of underground oil reserves lies in determining the factor of efficiency. Even in cases where the oil-bearing area of a horizon can be determined in sufficient accuracy (though in many cases it is rather difficult), the factor of efficiency can remain uncertain.

Theoretical calculations upon this subject help very little in finding the concrete factor of efficiency. A more effective method is to work out the actual factor of efficiency for horizons, which are already or almost exhausted in order to use these efficiencies for new areas. For this purpose we need the actual data on the total amount of oil obtained from an already exhausted oil field (if it has only one horizon) or data on the total amount of oil obtained from each horizon of such an exhausted field, if it has many horizons.

The remaining data on these horizons (volume of horizon, specific gravity of oil and factor of porosity) are also known in so far as these horizons have already been exploited.

The factor of efficiency of such horizons is then determined by the formula

$$x = \frac{S}{V \cdot d \cdot a}$$

The efficiency can also be determined for horizons with a large number of wells in exploitation.

In this case the remaining future production of producing wells must be estimated by curves and added to the total of oil already obtained. The efficiency ascertained by these preliminary calculations can be assumed as an actual quantity because the estimation of future production by curves can be considered as reliable; besides this preliminary calculated production of almost exhausted areas represents but a small per cent as compared with the amount of oil already obtained; thus the possible error can effect but little upon the factor of efficiency deduced for the horizons under discussion. If necessary, the approximate determination of the efficiency can also be made on that stage of the development of a horizon when it is not completely exhausted.

The greater the number of horizons, for which we have the actual factors of efficiencies, the more reliable will be the conclusions, which can be drawn from the analysis of these efficiencies.

In this analysis we must compare the actual efficiencies with the natural properties of oil producing hori-

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zons and of oil contained in them.[1] These properties from what is usually called the "control" of the horizon.

Without going into exact formulation of the meaning of the various "controls" (this being a fairly debatable question), we can determine (on the basis of the practical exploitation of very many horizons of the Apsheron fields), the undoubted relationship between the natural properties of the beds (and the oil contained in them) and the factor of efficiency.

The main properties connected with the efficiency are as follows: 1. Initial pressure in horizon and factors causing this pressure (gas or water[2]; 2 Permeability of horizon; 3. Physical-chemical properties of oil.

The greatest factor of efficiency is possessed by horizons with great gas pressure, large quantity of gas dissolved in oil, great pressure of edge waters (which may immediately reappear at any point of the horizon), as well as the great permeability.

During the first periods of exploitation of such horizons we obtain powerful oil gushers with great pressure and large quantities of gas (presence of free gas accumulation is possible); later on the amount of gas decreases but the pressure of edge waters continues to be displayed at any point of the horizon in the form of oil gushers; water appearing but at the boundaries and in deep wells.

Somewhat smaller and less intensive recovering is natural to horizons with small quantities of gas dissolved in oil and with a similarly large and rapidly reappearing (due to great permeability) pressure of edge waters at any part of the horizon.

The efficiency is greatly dependent on the amount of the pressure of the edge waters as well as on the degree of permeability of the rock of a horizon.

Horizons with small edge-water pressure which (due to insignificant permeability) does not reappear or reappears but slowly in the elevated parts of the horizon (not far from its boundaries), will not have great efficiency even if at the beginning of the exploitation there was a great gas pressure. Such horizons are characterized by powerful oil wells with large amount of gas, which in the process of exploitation rapidly decrease the pressure.

The efficiency of such horizons will be even less when the permeability is great. In this case, the gas is drained by first wells from a very large area and then due to the exhaustion of the energy of gas and the absence of other sources of energy (the pressure of edge waters being small) the production of wells rapidly falls down.

When the horizon is characterized by such properties, the irrational utilization of gas leads to a catastrophic decrease of the efficiency; horizons with small permeability have (under the similar conditions) higher factor of efficiency because in this case the irrational utilization of gas in individual wells has not such a ruinous effect on the future output.

In order to obtain the greatest efficiency the development of horizons (with great and permanent edge-water pressure and permeability) is to be carried out very carefully to avoid abnormal movement of edge waters (tongues and cones).

All these facts show that the efficiency, which is largely dependent on the natural properties of the horizon, may under certain conditions be subjected to considerable changes depending on the conditions of exploitation.

Finally, the viscosity of oil and probably some other physical-chemical properties also influence the efficiency. In particular, the presence of heavy oil of greater viscosity lowers the efficiency of the horizon.

For general idea of the efficiencies of horizons with various natural properties (with various controls) we have made up a table of approximate efficiencies, which is based on preliminary and incomplete data.

In conclusion it should be noted that in determining the efficiency for individual horizons of eroded structures it is necessary to take into account the distance of the given section of the horizon (for which we are finding the efficiency) from the outcrops of the latter. The efficiency of such sections will be very small.

In so far as the table was made up on the basis of data on the exploitation of Apsheron fields it is most probable that these efficiencies would differ from those of other fields. At the same time it is beyond doubt that when drawing final conclusions on research work carried out with a view of establishing the efficiency, we shall be able to give a quantitative estimation of all influential factors (pressure of edge waters, permeability of horizon, etc.).

In the process of the research work (which is carried out in order to establish the relation between the efficiency and the natural properties of the horizon and of oil contained in it) the determination of the efficiency for discovered and prospected horizons can be made with more accuracy.

Therefore after estimating the reserves of any horizon by the method of curves (for producing wells—prepared reserves, for its outlined areas—explored reserves and for the areas probably oil-bearing—visible reserves) it is advisable to check the total figures of these reserves by the figures calculated for the given horizon by the saturation method.

In determining the probable efficiency by the abovementioned method a fairly accurate estimation can be made of the reserves of those horizons, the natural properties of which have been determined by the data of the first test wells (areas which proved to be economically oil-bearing).

When estimating reserves referred to the fourth and fifth categories the efficiency is determined on the basis of more general interpretation. In order to obtain the necessary efficiency (for estimating reserves) we must compare the given area with some other geologic province, the efficiency of which as well as the lithology of section and especially of oil-reservoirs are well-known.[3]

In some cases (when estimating probable reserves) we must apply a certain average efficiency (with its corresponding variations). This efficiency is calculated for those oil-fields, which for some reasons are analogous to the areas containing probable reserves. When calculating the average efficiency for the group of horizons and oil-fields with the aim of applying it for the estimation of probable reserves of analogous horizons of oil-fields it is necessary to calculate not the average arithmetical efficiency, i. e. not the quotient obtained by dividing the sum of the efficiencies of these horizons by

[1] At the same time we must determine the efficiency of those oil-bearing horizons, in which the system of exploitation sharply differs from those used generally in the greater part of horizons (due to the relation existing between the efficiency and the system of exploitation).

[2] Horizons in which from the very beginning of their operation the oil flows to the well under the pressure of gravity are in the majority of horizons of no industrial significance.

[3] Between the permeability of horizons and their mechanical composition there is without any doubt quite definite relationship: the coarser average grains, the higher is the permeability (and consequently the efficiency, if other conditions are the same). More homogeneous sands are characterized by greater permeability as compared with less homogeneous (if average size of grains is equal for both).

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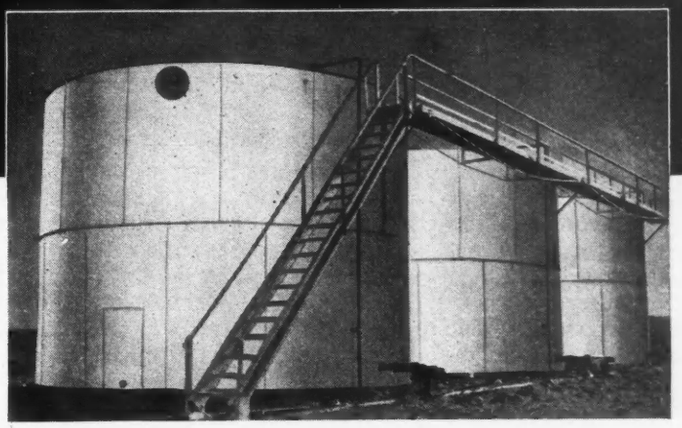

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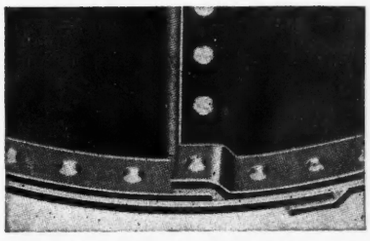

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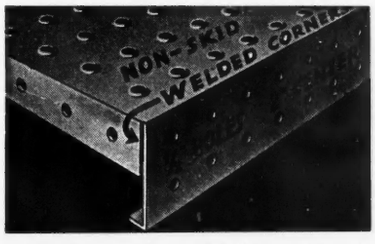

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Great	Is of chief importance for rate of recovery	Considerable	0.8—0.9	Correct movement of edge waters
Not great Not great	Great Not great	Considerable Average	0.6—0.8 0.4—0.6	Rational gas oil ratio in exploitation and correct movement of edg-waters
Very little Very little	Great Not great	Indefinite Indefinite	0.3—0.4 0.2—0.3	Rational gas factor in exploitation

Note: Presence of heavy oil of greater viscosity in oil-bearing bed lowers the efficiency shown in table.

their number, but the mode, i. e. the most frequently repeated and most characteristic efficiency of the horizons under discussion; it is also necessary to take into consideration the possible variations of the mode.

(c) The definition of probable oil-bearing areas

The determination of probable oil-bearing areas is also of great difficulty. In order to project the size of areas favorably oil-bearing and subjected to a structure, we must carry out an exhaustive research work with a view of determining the height of deposits of the oil-fields already known. Perhaps in the course of the work we shall be able to find out that there is no great difference between the height of oil deposits of separate fields of the same geologic structure and the height of the similar structures; consequently we can estimate an average height of a deposit available for those new oil-fields the reserves of which are to be estimated.

If, however, we find out that the height of deposits varies considerably even for similar structural forms and oil fields of the same geological province, then a thorough analysis is to be made to study and compare the height of the deposits of each oil-field with the height of its structure.

May be this ratio (estimated by actual data) will prove to be connected with definite structural forms; or some definite geologic basis will be found to ground some or other factor of efficiency.

In any case, this research work both on the determination of deposit heights and on the heights of structures together with the establishment of the coefficient (which shows the ratio of the above values) is to be made with regard to all fields already known, the results obtained being carefully analyzed.

It is hard to suppose that such exhaustive material will not lead to certain conclusions, which will make it easier to establish the possible height of deposits in those structures, which have been discovered by field work and geophysical surveying or are surmised on the basis of general geological data.

If it is possible to establish at least approximately the heights of deposits in new structures then on the basis of data on the angles of dip we shall be able to calculate the possible oil-bearing surface area.

Apparently we shall be obliged to take a certain average of the area of oil-bearingness for a series of areas, the resources of which are referred to the category of possible reserves. This average is determined on the basis of general geologic considerations as well as on actual data on the oil-bearing areas of adjoining oil-fields.

The method of determining the possible oil-bearing areas as in salt domes and the fields situated near faults differs but little from the method applied to oil deposits subjected to structural forms in general.

The determination of the possible height of oil-deposits or the ratio of this height to the height of structures can also provide material for a more definite supposition on the outlines of oil-bearing areas of these fields and especially of the contact of oil with water.

It is of especial difficulty to forcast the probable oil-bearingness of those rare oil-fields, which are not subjected to structures and in which the outlines of oil reserves depend on the boundaries of distribution of permeable rocks accumulating oil.

In this case we shall not be able to avoid very rough approximation, i. e. the extension of a certain average with all its possible variations upon areas with indefinite outlines of oil-bearingness. This average is calculated on the basis of actual data on the size of oil-bearing areas of already known oil fields of this type.

It should be, however, noted that due to the comparatively rare occurrence of such reserves even a very considerable error cannot in any serious way effect the general balance of the estimation.

(d) Determination of the Thickness of Horizons

The formula of the saturation method includes the thickness of the horizon; the product of the thickness by the area gives the total volume of oil-bearing rock.

In this case, the thickness of the horizon means but the total thickness of its porous and permeable part capable of yielding oil. Therefore in determining the thickness for the formula of the estimation by saturation method we must subtract from the total thickness all the interbeds of clay, sand and those rocks, which due to their small permeability can yield but insignificant quantity of oil.

Data obtained by electrical coring (electric resistance and P. S.) and followed by careful geologic interpretation may be utilized as fundamental material for estimating the productive parts of the total thickness of the horizon.

In estimating resources (supposed and possible reserves) for areas not yet disclosed by deep drilling we must calculate the total thickness of productive parts of all oil-bearing horizons.

For areas considered to be economically oil-bearing the estimation of total thickness is made on the basis of geologic investigations and available data on analogous section in adjoining oil-fields.

As well as other factors, the thickness of a horizon can also be calculated within certain limits of its significance.

(e) Determination of Remaining Factors

The formula of the method of saturation together with the factors already mentioned (efficiency, oil-bearing area and thickness of a bed) contains two more factors: specific gravity of oil (in order to obtain the weight of oil reserve) and the factor of porosity (in order to determine the total volume of pores.)

In estimating reserves the first factor is not of essential importance. The oil reserve can also be expressed in units of volume. The application of this factor is more important from the point of view of estimating the quality of the reserves of any field or horizon.

The estimation of this factor does not present actual difficulties in calculating visible reserves, that is reserves obtainable: 1. from not yet outlined parts of horizons already prospected; 2. from discovered but not yet sufficiently tested deeper horizons of producing

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areas; and 3. from areas proved to be industrially oil-bearing.

With regard to not yet outlined parts of already prospected horizon, it should be borne in mind that different parts of the same horizon may contain oil of different specific gravity. We have observed this case in the Apsheron Peninsula, when investigating the distribution of oils according to their specific gravity; the data obtained by us testify that in the majority of fields the specific gravity of oil increases from top to bottom, and consequently in the marginal parts the oil is of greater specific gravity than in the central parts. Therefore, data on specific gravity calculated for one part of the horizon can be applied to some of its other parts, sometimes with some slight corrections.

As to the specific gravity of oil from horizons not yet discovered, we can obtain some idea about its quantity from the analysis of data on overlying horizons. In many fields the distribution of oil by its specific gravity is subjected in various beds to a certain regularity—gradual increase or gradual decrease from top to bottom.

In any case, the extrapolation of this regularity downwards to discovered but not yet tested horizons (visible reserves) or even to not yet discovered horizons must give better results than the application of a certain average specific gravity calculated on the data of specific gravities of oils from already tested horizons.

With regard to areas not yet tested (supposed and visible reserves) the specific gravity can be projected on the basis of the specific gravity of oils contained in analogous cross-section of prospected areas.

In any case the specific gravity of oil is usually ranging from 0.840 to 0.920 (lighter oils are met with very rarely), i. e. the greatest possible quantity exceeding the minimum by only 10 per cent. Thus, the probable error in determining the specific gravity when calculating the probable and possible reserves will not have any serious effect on the estimated figure of resources especially if we take into consideration that in estimating the reserves of these less trustworthy categories (supposed and possible) the other indices (as for instance the probable size of oil-bearing area) can be far more unreliable.

As to the factor of porosity it is calculated of course in the laboratory on the basis of samples taken from wells. For areas not yet discovered by deep drilling, this factor can be determined from samples taken from artificial outcrops, or established by analogy.

It should be noted that the conceptions of porosity and permeability must be strictly distinguished. By the use of factor of porosity, we calculate only the total volume of pores in the given oil-bearing rock, while the efficiency is connected by us with the permeabiltiy (it is true that the form of pores, their size, the form of inter-pore spaces, etc., influence the degree of permeability of a horizon, but these factors are not connected with the conception of the factor of porosity.)

In estimating reserves some authors include in their calculations the increase of the volume of oil contained in the oil-bearing horizon as compared with the volume obtained on the surface during the operation of wells. This increase, according to some authors, may amount to 25 percent.

It is however not necessary for us to include this correction because in all our estimations we introduce the efficiency calculated and determined on the basis of actual data and representing the ratio of the quantity of oil obtainable by wells to the total quantity of oil, which may be contained in an underground horizon, if all the pores of its permeable part are filled with oil.

VI. Other Methods of Estimating Reserves

In so far as the methods of estimating the ultimate production for one unit of area (one hectare, one acre, etc.) and for one unit of volume (100 c. m., the acre—foot, etc.) are wide spread we are obliged to dwell upon them as well.

Both these methods are nothing but a certain variation of the above given method of saturation.

It is quite clear that the estimation of any new area by analogy with the area already exploited is possible only in that case, when the oil recovery and the thickness of both cross-sections are analogous. The analogous oil recoveries mean analogous efficiencies for both areas: as to the identical thickness, it can be used as a ground for estimation of reserves by saturation method. It should be also noted that when using this method it is also necessary to determine the probable size of the oil-bearing area of new oil-fields under consideration.

The second method is the method of saturation, based on an unclearly expressed surmise that the efficiencies of both compared areas are accepted as equal.

VII. Data Necessary for the Final Reserve Figures

Besides the estimation of areas of various groups in the manner indicated at the beginning of this report it is necessary to add the following data to the final figures of reserves: 1. In estimating prepared reserves: the initial production of producing wells; rate of decline used in calculations; 2. In estimating explored reserves: size of explored area; number of new wells projected; their initial production; rate of decline; 3. In calculating visible reserves: (a). by the method of curves by analogy: the same factors as for explored reserves; (b). by the method of saturation: all factors included in formula of this method; 4. In comparing the total reserve of each horizon estimated by the method of curves with the figures calculated by saturation method: the amount of oil already obtained and the factor of efficiency determined by the method of curves; 5. In estimating supposed and possible reserves: all data included in formula of saturation method.

Conclusions

It runs from the above said that by the underground reserves of economical importance we understand the reserves obtainable by wells from each horizon by the modern method of exploitation.

Therefore, the reserves estimated by the method given in the present report do not include those reserves, which can be obtained by the so-called secondary methods of exploitation as well as by mining.

We have followed this line because at the present moment there are no sufficient data on how the efficiency can be increased by using the methods here discussed.

It is also impossible now to find out with sufficient accuracy to which horizons the secondary methods of exploitation can be better applied.

The data on the percentage of oil obtained by means of mining are still more contradictory and less reliable.

Nevertheless if it is necessary to estimate the reserves, which can be obtained by the wide use of secondary methods, we must determine the percent of the mistake of efficiencies already accepted and establish thus the amount of recoverable oil.

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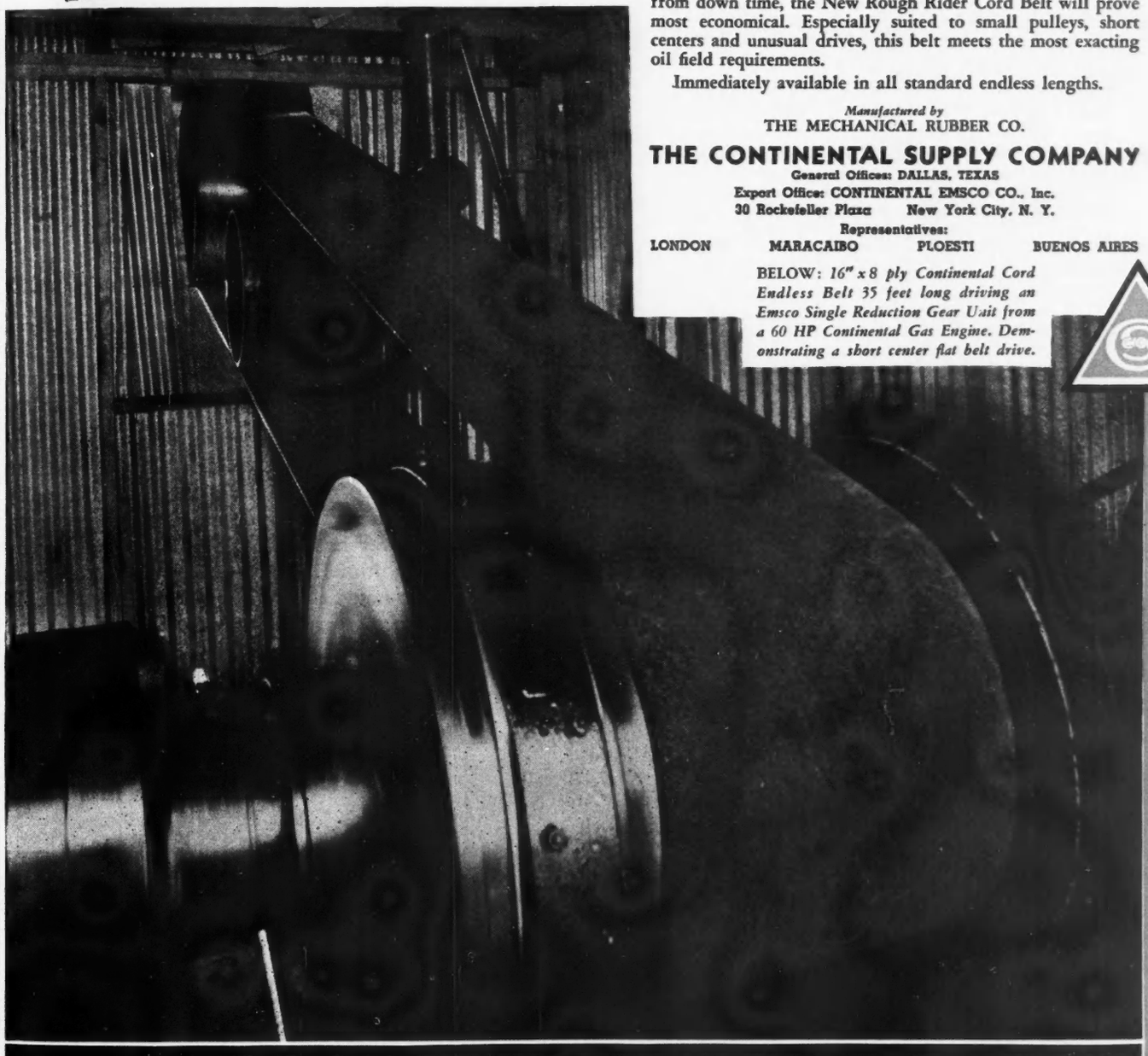

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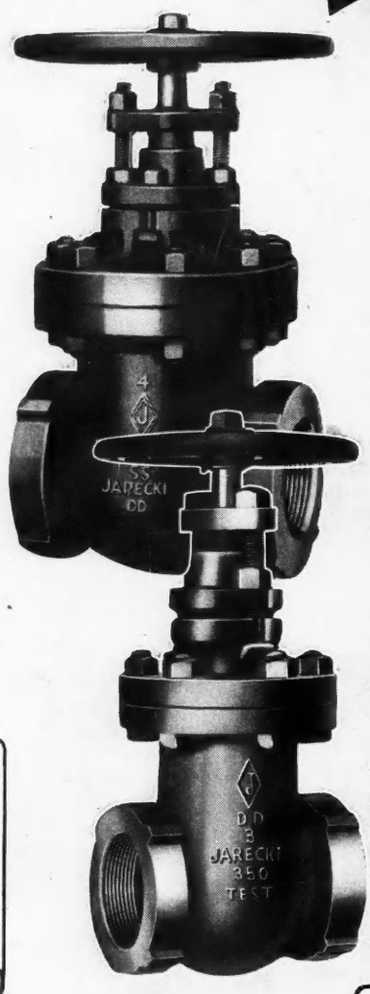

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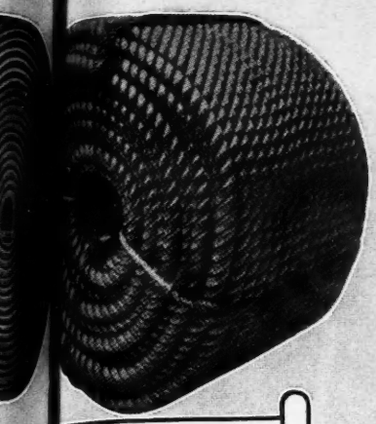

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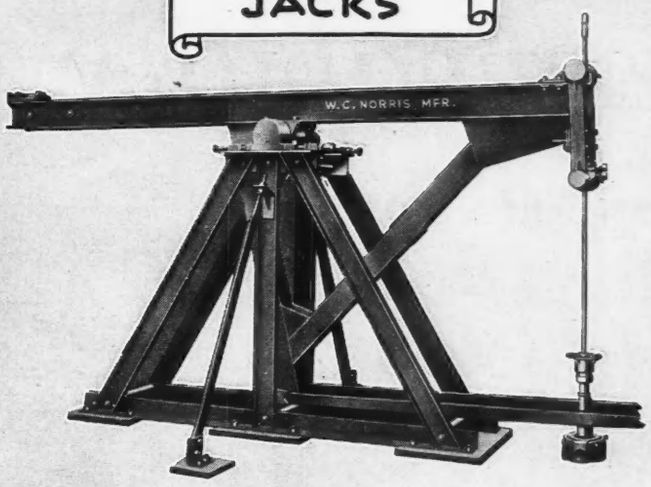

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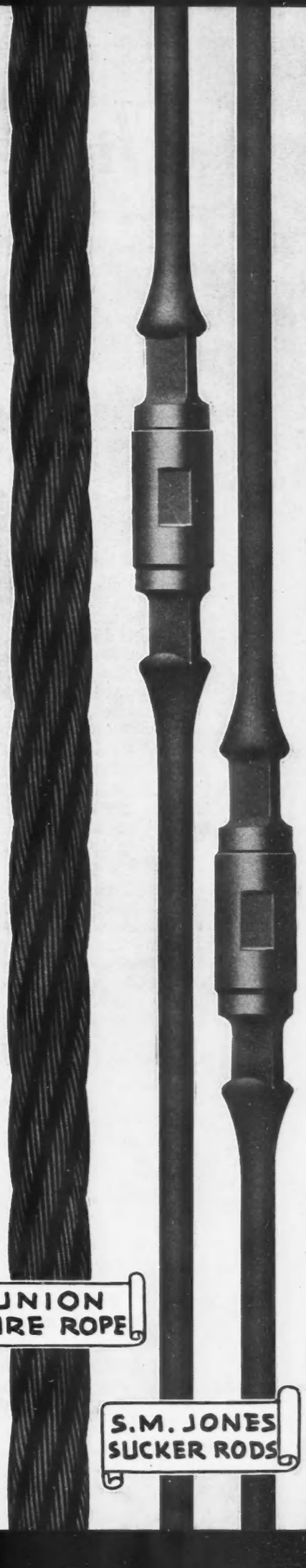

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The Permeability

OF SANDS IN RELATION TO

Increased Recovery

By W. S. CORWIN, Manager,
Tide Water Oil Company, Robinson, Illinois

THE spring of 1936 finds the demand for petroleum products in the United States approaching an all-time high, so it becomes quite appropriate to discuss methods of increasing crude oil production to meet this demand. This increase may be obtained in part through the discovery of new fields, which is a reasonable possibility in Illinois, and in part through increased efficiency in operation and improved methods. Considerable secondary recovery has been accomplished through repressuring with air and gas. Our State Geological Survey has made studies and done research work on these problems, which has been very helpful to the operator, and, at the same time, demonstrated the possibility of various methods of recovery.

Primary factors to consider in the study of secondary recovery are the thickness and uniformity of the sand, and where initial production indicated high saturation. This being determined, the question of permeability has become a vital factor and from this angle we will discuss the problem of increased recovery.

In looking around we find other areas, such as the northwestern territory in Pennsylvania and the shallow Bartlesville field in northeastern Oklahoma, utilizing water and obtaining much greater recovery than was obtained by air or gas. A study of scientific water-flooding now in use develops the need of definite knowledge of sand conditions such as uniformity and extent of sand body, porosity, and the ability of a sand to permit liquids to move through it, which is called its permeability. Next, the knowledge of the amount of oil in the sand body, knowledge of whether one can move this oil through this sand, and at what rate, are the most important factors in arriving at a conclusion as to the possibility of successfully water-flooding a given property.

In May, 1935, the standard procedure for determining permeability of porous media was adopted by the American Petroleum Institute. The committee appointed to consider the method of standardizing the measurement of permeability has named the unit "darcy" after Darcy, a Frenchman, who in 1856 first formulated the liquid flow law for porous matter. Most of these factors have been discussed in the literature of the oil industry, but it is only in recent years that the true value and importance of permeability has been realized, and in many of the technical journals complete descriptions of equipment and methods of making permeability tests have been published.

In actual laboratory practice, the first procedure is the preparation of samples from the cores. There are many fully equipped laboratories located throughout the active oil fields where cores may be sent, permeability, porosity and saturation tests made, and reports obtained to guide the producer in considering the repressuring possibility of his property.

Permeability is governed by the grain size and shape, and the type of cementing material. Rounded grains of sand will allow a greater flow than angular grains. The relationship of porosity and permeability is one of quality. A solid is permeable by virtue of its porosity, and a solid of no porosity would be impermeable to a fluid, but solids of the same porosity could be impermeable, slightly permeable, or highly permeable, which has been a source of the confusion in water-flooding practices in the past.

An outstanding example is found in the development of a 110-acre tract near Bradford, Pennsylvania. Five years ago two wells were cored before flooding, one in the north area in a section we will designate as "A" and one in the south area in a section we will designate as "B". These two wells were 1200 feet between locations and were in about the center of each 55-acre section of the property. The "A" core showed an average porosity of 11.50 percent with an oil content of 16,000 barrels per acre. The "B" core analyzed 12.10 percent average porosity, with 15,000 barrels per acre saturation. These two wells encountered the same section of sand with little variation. As a result of this core analysis, a spacing of 600 feet from water-to-water was laid out on the basis of porosity tests, which was the accepted method at that time. The entire tract was drilled up according to that pattern, and 2200 pounds water pressure was applied to the sand in all intake wells. The operator was amazed to learn that the wells on the "A" section would take only 1/3 as much water as those on the "B" section. When wide open, the "B" section wells took an average each of 250 barrels of water per day. These were later pinched back to 100 barrels each. The "A" wells took an average of 70 barrels of water per day. The oil wells were then drilled within the five-spot and the daily average oil production from the "A" wells remained ⅛-barrel each per day, while some oil wells in

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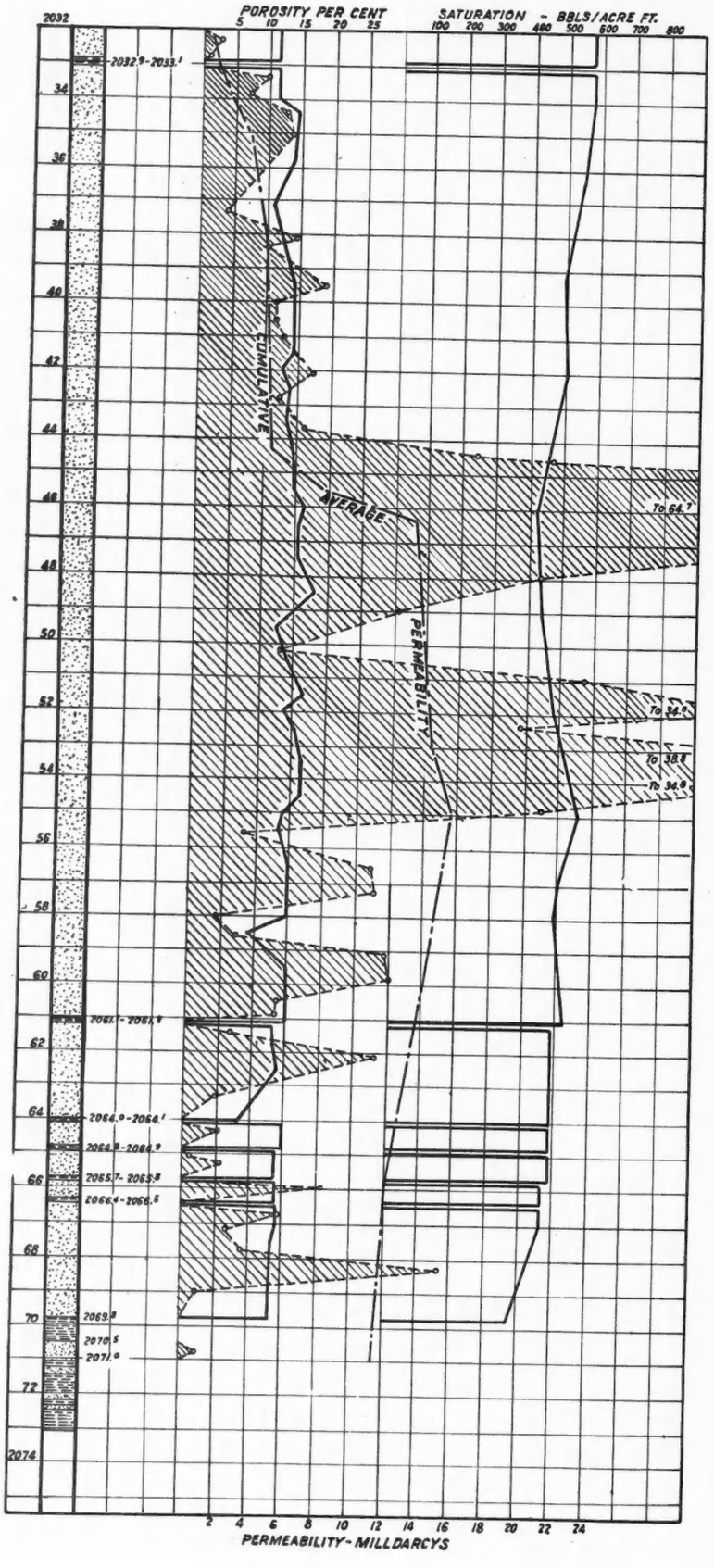
the "B" section increased to 35 or more barrels per day within a period of three years. Fortunately the cores had been saved and permeability tests were then run on these cores. The "A" well had an average permeability of 2.72 millidarcys, while the "B" well had an average permeability of 28.5 millidarcys, with a section running as high as 390 millidarcys. Calculating a flow through the less permeable section, it would take many years to flood the "A" section and four years had been lost in the development. When this condition was finally established, the "A" section was redrilled, cutting the spacing in half. Water has now been going into these new patterns for two months and quick recovery is anticipated. This example clearly demonstrates the necessity of proving permeability for repressuring or flooding, and should be determined before planning a well-spacing program.



Graph showing the porosity, saturation and permeability of a well at Bradford.

Another property in McKean County, Pennsylvania, affords a different example. On this property the Bradford sand is broken into two separate beds which are divided by a shale break having a thickness of eight feet. The upper sand bed has an average thickness of 28 feet, an average oil content of 10,500 barrels per acre, and an average permeability of 11.0 millidarcys. The lower sand has an average thickness of eight feet, an average oil content of 3600 barrels per acre and an average permeability of 145.0 millidarcys. The first flood on this property was a failure due to the fact that the water came into the producing wells in large volume within six months after they were completed. Two cores were then taken which showed that the water was traveling entirely in the lower sand. The producing wells were therefore plugged back as soon as the lower sand bed was watered out, and by following this procedure and forcing the water to move through the upper bed, a recovery of about 5200 barrels per acre will be obtained, whereas the original recovery was only about 1500 barrels per acre.

Carrying the investigation to Allegany County, New York, the following facts were established on a property where two sands are encountered. The core of the first sand showed an average thickness of 11 feet, oil content of 3900 barrels per acre, and average permeability of 4.0 millidarcys, while the core analysis of the second sand showed an average thickness of 20 feet, oil content 8000 barrels per acre an average permeability of 65.0 millidarcys. The recovery on this property where both sands were flooded under an average pressure of 900 pounds per square inch —the packer set at top of first sand—was approximately 2900 barrels per acre. By using two strings of tubing and applying a pressure of 1500 pounds on the first sand and a pressure of 600 pounds on the second sand, a recovery of 3700 barrels per acre has already been obtained in about 2½ years, and the estimated ultimate recovery will be about 4500 barrels per acre. Many similar examples could be cited, all brought about by the ef-

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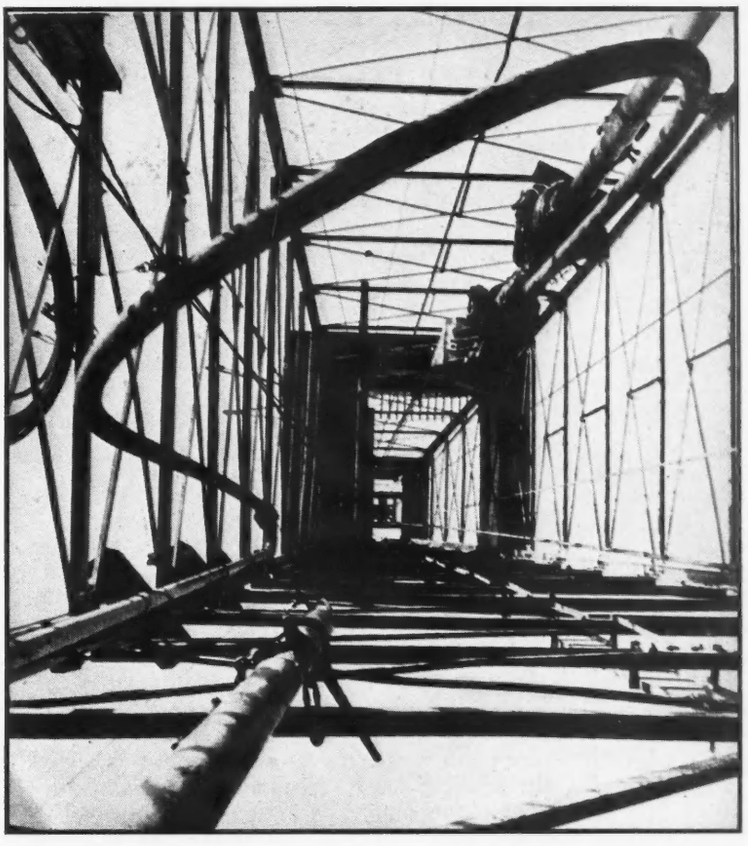

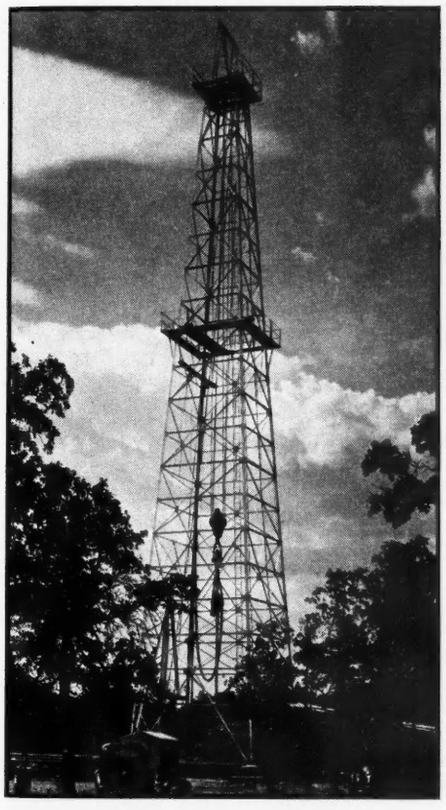

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forts of petroleum engineers in determining the flow of liquids through sands, based on permeability tests.

Attached will be found a graph showing the porosity, saturation, and permeability of a well in the Bradford field. Before permeability was established, one would assume that owing to the uniform porosity and saturation this would make an ideal flooding situation. By referring to the colored area, indicating permeability values, the section in the upper and lower division are within the range of values commonly encountered in the Bradford sand or between four and five millidarcys, while the middle section runs as high as 64.7 millidarcys, with an average of 27.0 millidarcys, four or five times above the average Bradford value. This example is shown to indicate the problem presented by a loose streak in the formation. The saturation analysis indicates 18,000 barrels per acre with a possible recovery of 6700 barrels per acre, a difficult problem owing to the fact that the highly permeable streak is in the middle section. The records show that the cored well shown in the accompanying graph, converted to water intake in February, 1935, has taken 41,713 barrels of water to date at an average pressure of 900 pounds per square inch on the sand surface. Without permeability data the operator would consider the sand was fully flooded when water appears in large volume in his producing wells. A delayed drilling program, such as has been developed in the Bradford field, represents a partial solution to this problem. Under this program, using the commonly known five-spot plan of flooding, all water intake wells are drilled, water turned into the sand through tubing set on a packer, for a considerable period before the producing wells are drilled, the idea being that since the water will follow the path of least resistance, it will start flooding the loose streak first, but the hydrostatic head of water making each intake well a high pressure point, water moves away from this first, following the path of least resistance. It would then first move the oil through the loose streak but, since no oil well has been drilled in the center of the five-spot, after a time, pressure built up in the loose streak will dissipate itself and spread its force to the less permeable portion of the sand, naturally flooding more and more of the entire sand body. Based on calculations as to the amount of water a given area will hold under certain pressures, the operator decides when he shall drill his oil wells. Results in many cases have been astonishing in that in the area in which the oil well has been drilled and subjected to considerable pressure, wells of large initial production have been obtained and a large amount of oil produced in a relatively short time. To date this has been the most successful method of attack. Experiments are now under way, using gas ahead of the water drive, some operators buying gas for this purpose. From a scientific view point, this method has wonderful possibilities.

In testing out actual results, indicated by the permeability tests, some of the Bradford operators have obtained very interesting facts. In one case a company has been coring and testing wells for some time in an area which has been under flood for two years. Checking the actual input volumes of the cored wells against the indicated capacities of the sand to take water as shown by permeability tests, it has been possible for this operator to core wells in the adjacent part of the lease, and from the permeability tests, be able to forecast how much water the intake wells will take when turned on, the pressure being maintained the same as it was in that part of the lease which had been flooded.

Secondary recovery results in the Bradford field are interesting. In a productive area, covering 95,000 acres, the daily poduction in 1910 was 4000 barrels. In 1935, the daily production in the same area was 35,000 barrels, with a conservative estimate of 188 million barrels of recoverable oil remaining in the sand. In Illinois the production of crude oil was 33,000 barrels daily in 1910, dropping to 12,000 barrels daily in 1935, from approximately 98,000 acres. No comparison of relative sand values in these two fields is implied. The larger body of unbroken Bradford sand should yield a larger amount of oil but when one studies the slow natural decline of Illinois fields, one finds few areas in the United States where the production has held so well. Therefore, this territory offers a challenge to the geologist, the chemist, and the engineer.

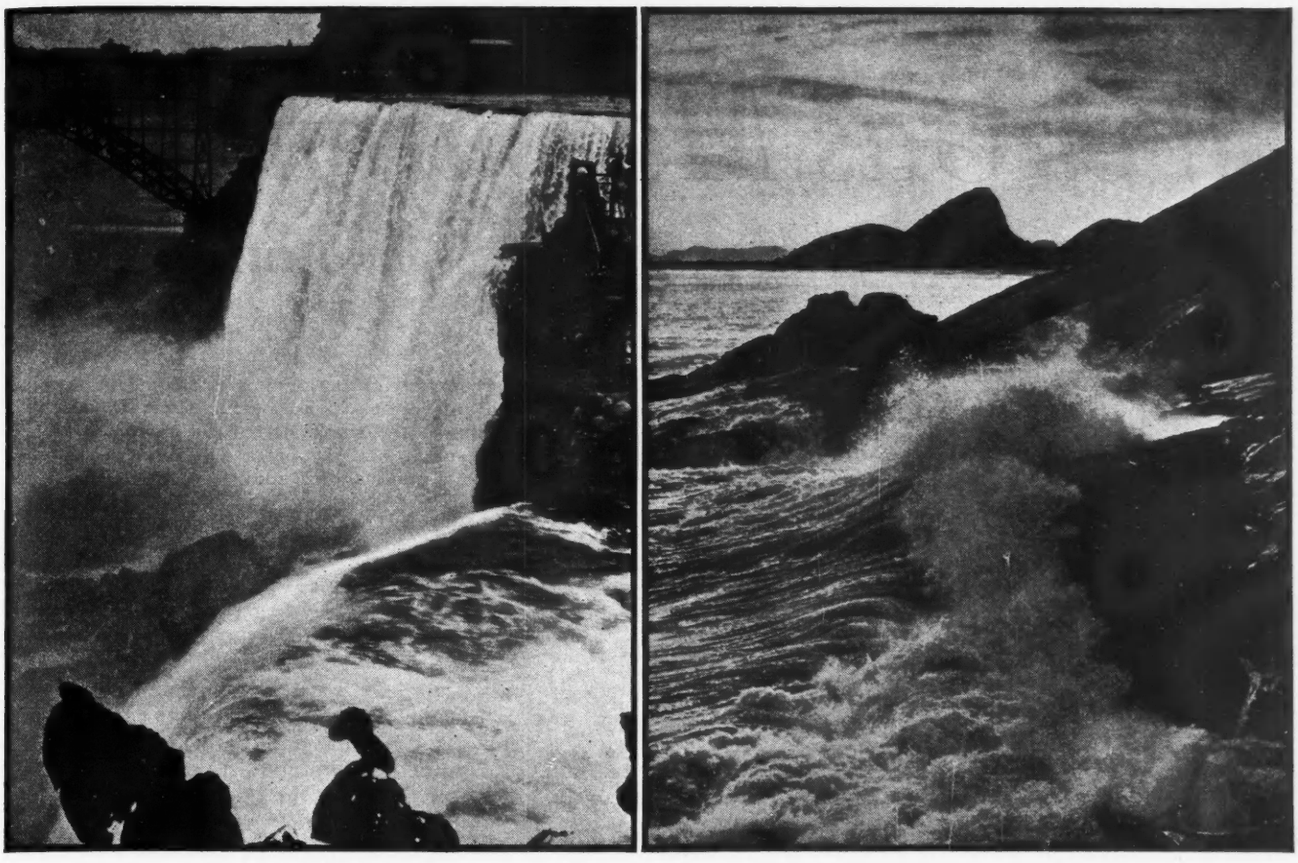
In May, 1933, the Illinois legislature passed an amendment to the state act legalizing the introduction of water under controlled pressure into the oil-bearing sands, in such a manner as to give protection to coal and other mineral resources; but to date little effort has been made to take advantage of this grant. The State Geological Survey has made extensive studies of a natural waterflood in the McCloskey sand in Lawrence County and also a large number of accidental water-floods scattered through Crawford County, Illinois, indicating very conclusively that some Illinois sands will successfully water-flood. Unfortunately we have no core data available on Illinois sands, due largely to drilling inactivities during the past five years, affording little opportunity to make a scientific study possible. Any suggested practice applicable to Illinois sands would be largely conjecture. Permeability tests have been few. One from a core in Crawford County ranges from 3.0 millidarcys to 87.0 millidarcys. A single sample from a well in Wabash County, Illinois, having a fine uniform grain sand but being deficient in cementing material, has a permeability value of 429.0 millidarcys, which would condemn the property for any type of repressuring unless its position in the main body of sand was such that it could be successfully packed off.

The recommendation is offered that operators take cores to build up data about their territory. Engineering and laboratory procedure should be prompt and accurate. When the sand is cored, all details of the core analysis should be available before shooting and completing the well. The operator should know what portion of the sand to shoot, where the good saturation lies so as not to flood barren areas, and where to pack off loose streaks. This information is not decisive until after the core has passed through the laboratory.

Drilling contractors generally make a charge for holding up completion, therefore laboratory analysis should be available in the shortest possible time. Where test wells are drilled ahead of dvelopment, a delayed study is possible. We believe the State Geological Survey is in a position to render invaluable help to the operator from a scientific standpoint, and its laboratory is equipped to offer the latest research. We know from experience that the highly-trained personnel of the State Geological Survey will aid and encourage the operators who bring any problems to them in a definite form, but to obtain results the operators in Illinois must tackle their problems from a scientific standpoint.

By scientific research and application of geological study, it is possible to bring back the production of crude oil to its former prominence as an industry in the State of Illinois.

This paper was presented before the Fourth Illinois Minerals Conference.



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PROBLEMS OF *Wet Gas Measurement* AND REGULATION

By G. W. McCULLOUGH, Phillips Petroleum Company and R. D. HANLEY, Magnolia Petroleum Company

THE accompanying article was presented at the Southwestern Gas Measurement Short Course, held recently at the University of Oklahoma, Norman, Oklahoma, and is presented through the courtesy of its publication committee.

THE measurement of wet or casinghead gas presents the many kindred problems of dry gas measurement, and also many more problems peculiar to itself. There is also a great difference in value per MCF usually between wet or casinghead gas and dry, or gas well, gas. This economic difference in value is sometimes the cause of many of the problems of wet gas measurement and regulation. Only so much can be spent on meter maintenance and operation before it becomes uneconomical to measure wet gas. For this reason, when meters and regulators are put in to measure wet gas, they should be put in properly, and intelligently, with proper study having been given to problems on hand. The changing of metering runs, regulators, plates and meters will so run the cost of installation up to such a point that the metering expense can exceed the value of gas being metered.

As in dry gas measurement, the measurement of wet gas necessitates the creation of static and differential pressures, the transmission of these pressures, recording of these pressures, and finally the interpretation of same from chart.

Wet gas measurement can be divided into two distinct parts: (1) measurement of sweet gas, and (2) measurement of sour gas.

Sweet Gas

Sweet gas measurement can be further divided into many subdivisions and heads, and in order not to group the problems of each specific field or area under a separate heading it will be best to divide the problems into these classifications:

1. Problems in old and high vacuum fields.
2. Problems in settled and low or no-vacuum fields.
3. Problems in new and flush fields.

1. *Problems in old and high vacuum fields:* Such as Burkburnett field, Cushing, Drumright and Burbank fields. The old fields usually have high vacuum on the wells and small volume of gas per lease or meter. The high vacuum or low pressure under which the gas is measured necessitates low differential, and the problem is to create, transmit and record the low static and differential pressures accurately. Problems can be put under following heads:

(a). Leakage—air into meter and manifold; if upstream, differential high; if downstream, differential low.

(b). Rust or scale—after a number of years, the action of air and water vapor on exterior of pipe causes a fine deposit of rust that collects in manifolds on the mercury and in the inpots, also adheres to the orifice plate and forms a cone on the up and downstream of orifice plate.

(c). Condensation trouble—under high vacuum, the gas being measured is in reality gasoline vapor that has been vacuum distilled from the oil, together with some dissolved gas. With a downward change in temperature, or a rise in pressure, the gas will condense into a liquid very easily. Also, because of the high vacuum, water vapor is carried with the gas and this will condense with the same changes. These two liquids, unless properly removed, will collect in meter run and will surge through orifice and some will get into manifold and meter.

(d). Dirt troubles—in some fields, especially where there is a loose sand formation, the velocity of the gas under high vacuum is so high that it will pull some of the sand up with the gas. Also, if the lines gathering the gas have leaks during rainy weather, they will suck in mud, and when it dries dirt will go with the gas. This dirt and sand result in cutting of plates and plugging of differential and static connection to meter run.

(e). Regulation—This usually requires that constant and equal vacuum be carried on all leases to allow equitable production of oil and gas and maintain GPM content. The difficulties encountered with measurement apply to regulation and necessitate constant attention to keep the regulators operating satisfactory.

2. *Problems in settled or low vacuum fields.* Such as Seminole, Eldorado, and others. In these fields, the gas is usually taken from the leases under slight vacuum as most of the separators, gun barrels, and separating devices operate at atmospheric pressure. The problem of wet gas measurement in this type of field is usually the easiest of all, and the problems of it are the same, but not as difficult as those of an old or high vacuum field.

(a). Leakage—here, as in the case of high vacuum leakage of manifold, a meter will cause error in differential.

(b). Rust or scale—the rust or scale problem is not as serious as it is in a high vacuum field, and in any field the pipe is not old enough to have started to give trouble by internal rust.

(c). Condensate or liquid trouble—can be more trouble in a settled field than in an old field. In cases, the wet gas is taken both from separator or gun barrel and flow tanks, and where oil is heated to break out water, vapors coming off of flow tank are very rich and sometimes will condense in line. Also, the separator or gun barrels have a tendency to hang up and oil will come over with the gas, resulting in a slug of liquid in line, which will surge through meter run, get into meter, and

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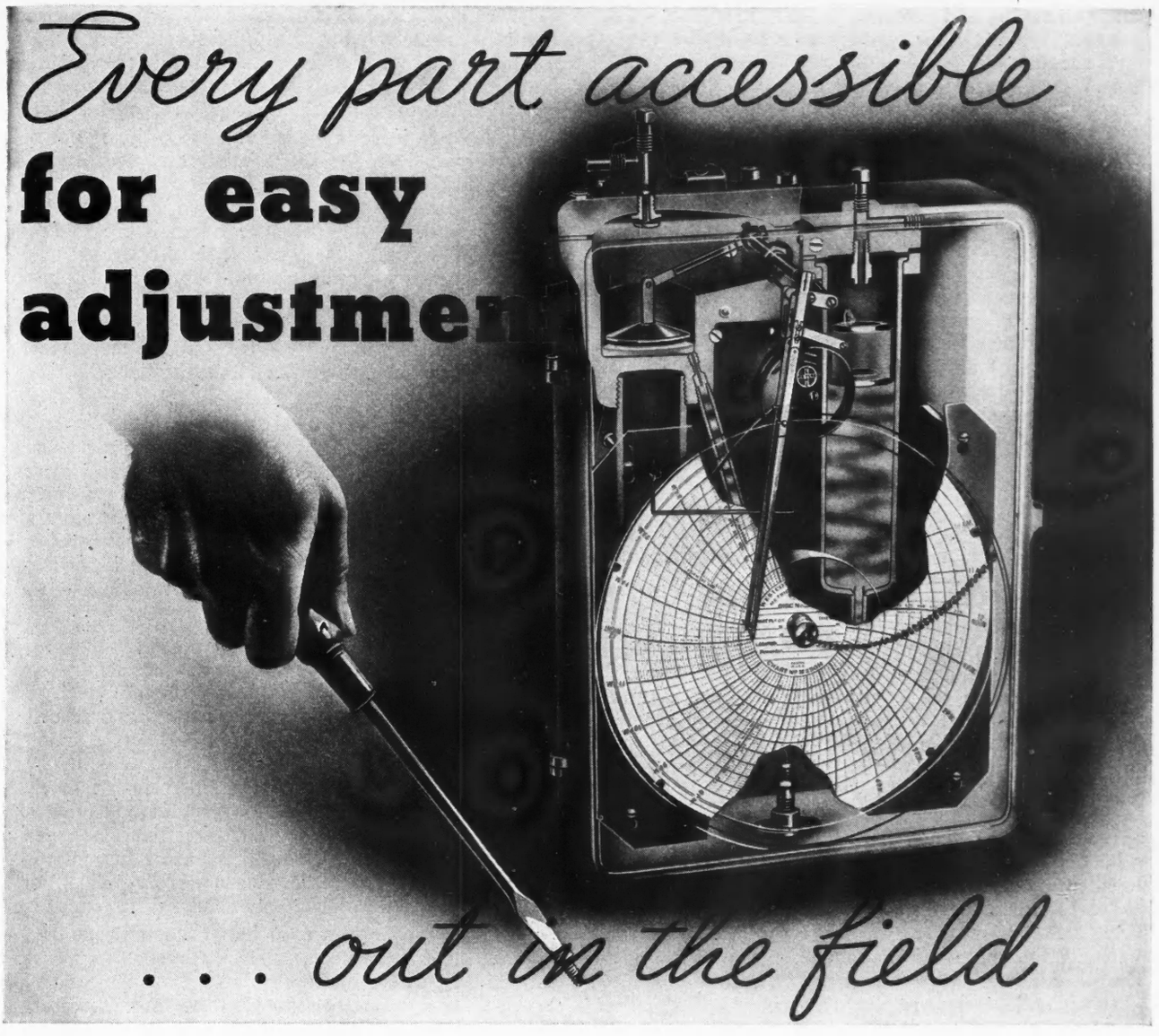

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cause an erratic and pulsating registration. Also, oil and gasoline will get into mercury pots as in the case of high vacuum.

(d) Dirt trouble—normally, the dirt problem is a whole lot less than that in a high vacuum field. Leaks will cause dirt and water to be pulled into line and result in plugged or partially filled meter runs and connections.

(e) Regulation—This may or may not be required depending upon the producers and their operations.

3. *Problems in new and flush fields:* Such as Oklahoma City, East Texas, and Rodessa. The problem of measuring gas in flush, high-pressure, intermittent and highly prorated pools is worthy of much consideration. The production of a day's or even a month's allowable, in the space of a few minutes to a few hours, means the handling of a large volume of gas over a short period of time, and makes the static and differential run all over the chart. This surging action or flow is traceable to the flowing of the well by heads, the intermittent operation of lift devices, the flow of oil and gas alternately through chokes, and the shutting of and turning on of various wells on a lease. With each change in proration, and with the taking of potentials, these surges are changed, and they are different from day to day. The big problem is oil in the lines, meter runs and meters; this oil is carried over from separators mechanically, because of high rate of production, and also may flow over when liquid controls hang or stick closed.

The problem of oil production is not controllable by the meter man, but is one he has to cope with, and means the installation of large meter settings to take care of high rates of flow, and yet keep static and differential on the chart. Also the use of pens that will keep ink in during these surges of pressure and make a record on the chart. The installation of drips will collect the oil and largely eliminate the surging due to liquid in meter runs.

(a). Leakage is still a problem and means tight connections.

(b). Rust or scale is not much of a problem as the fields are new and pipe is new or has been cleaned.

(c). Condensation is only a problem during cold weather, or when gas is taken from leases where oil is heated for treating.

(d). Dirt or sand trouble—with the flush or initial production of new wells, sometimes considerable sand is produced; and if oil gets into line, this sand eventually gets into meter run and meters.

(e). Regulation—Very little regulation is required except provision to protect the field gathering system, and hence the static springs in the meters, by installation of adequate pressure reliefs for the maximum gas volume handled.

Sour Gas

The detail of meter and measurement work on sour gas, or gas or vapors containing high percentages of hydrogen sulphide, presents all the problems of sweet gas installations except earlier in the life of a field and multiplied visits to sustain the same degree of accuracy. Rusting and corroding of pen points, static elements, clocks, checks, bearings, coupled with accelerated accumulation of iron oxide in the piping, mercury chambers, etc., require contact every thirty days or less, if dependance is to be placed in these instruments.

The accuracy of orifice plates in this service requires constant attention, as the continuous movement of both liquid and solid particles in the gas stream cuts the knife edges away, ruins the true circular opening and otherwise forces inspection every 30 days. The problem of changing plates in sour gas fields or service means two men on the job for safety measures.

The severe corrosion ever existant requires that regulators, moving meter parts, etc., must be fabricated from special metals to reduce the upkeep to reasonable figures.

Air leakage in sour gas service is costly. It not only allows errors in meter differentials and needless compressor load but upon entering the gas system reacts with hydrogen sulphide to form free sulphur and sulphurous acid. In the presence of moisture and heat separately or combined, corrosion is accelerated and if not eliminated will result in untold damage and stoppage of lines, meters, and equipment. Records are available of complete stoppage of both wet gas gathering and residue lines, and difficulty with household meters as the aftermath of such corrosion is the headache of many distributors.

In processing the natural gasoline from plants handling sour gas and who are troubled with air leakage, it is difficult to have a finished product that will meet sales specifications. In the new processes of polymerization and cracking, with their high temperatures and pressures, leakage represents a wet gas problem of even greater magnitude for both corrosion and hazards and it is largely the job of the meter man to eliminate these conditions.

General

We have gathered from various sources some records of the magnitude of this problem. In a combined sweet and sour area survey, where 830 meters and recording instruments were serviced, split up, 464 wet gas meters, 70 dry gas meters, 74 oil gasoline, volume control and water meters, and 222 recording instruments to check and keep in repair, a total of approximately 5600 calls were made during one year. During this same period 390 orifice plates were changed requiring two men each time, a total of 450 meter clocks were repaired and a tremendous amount of shop work was done.

The operating expense, including car mileage of 92,000 miles for this period, salaries, traveling expenses of men, meter, clock, instrument and controller parts and repair was slightly less than $2.50 per call. Unquestionably a survey of smaller scopes of operation would show this figure to be very reasonable if not low, in fact we have costs ranging up to $7.33 per call with an average of 35 miles per call and we do not feel that these are indicative of all local conditions.

The solution of these problems becomes the problem of proper installation and maintenance of meters, regulators, drips and meter runs. The meter run should be of such type that plate can be readily inspected and tubes be swabbed or cleaned out. The drips should be properly installed, so as to remove as much liquid and dirt as possible. The removal of these foreign substances will do much to insure the proper operation of the meters. The proper installations do not guarantee good measurement, unless there is regular, periodic, inspection of the meter, plate, tubes, and regular blowing of the drips.

The measurement of wet gas is the measurement of gas, and the proper measurement includes the removal or decreasing to a minimum all other substance in the gas and preventing same from entering meter run or meter. In those cases, where complete removal is not possible, meters, meter runs and plates should be inspected and cleaned out, regularly, at close enough intervals so as to secure good measurement. It is just a problem of continually inspecting, cleaning, replacing and checking.

The Evaluation of Oil-Bearing Cores

By K. H. CLOUGH, Chemical Engineer,
W. H. Curtin & Company

THE evaluation of cores, from the standpoint of their physical properties, can yield valuable information which, when added to the knowledge derived from the examinations by the geologist, the paleontologist, and the chemist, will go far in presenting a more complete picture of subsurface conditions in any given area.

The geophysicist, by the use of various instruments, locates potential producing structures. Once drilling is started on such a structure, the paleontologist and the geologist work together to correlate the wells and contour the structure. The chemist analyzes the cores and furnishes information as to the predominant compounds present, as well as the percent of sodium chloride present.

However, exact as are the modern methods of the geophysicist, the geologist, the paleontologist, and the chemist, none of the information supplied by them enabled either the production from a well or the estimation of reserves in a given area to be calculated.

The advent of several other pieces of equipment such as the bottom-hole bomb and the bottom-hole sampler, porosity and permeability equipment, and well surveying equipment, has helped fill out the picture.

Core evaluation, as regards the physical characteristics of the core, for the greater part has been left to the petroleum production engineer and his laboratories. The porosity of the core, the degree of saturation with oil, the sodium chloride percentage, the relative sand grain size relation, and the permeability of the core, both horizontally and vertically, are among the factors with which he is concerned.

In the apparatus shown in Figure 1, the determination of all the factors just mentioned may be made with the exception of permeability.

Part "A" is a specially modified type of Hopkins reflux condenser. It fits into the upper end of part "C" by means of a Number 30 interchangeable ground glass joint, a gas-tight connection which is necessary for the accuracy of the apparatus.

Part "C" is a specially designed, modified Soxhlet extractor tube. The inside diameter of the Soxhlet extractor tube, of the Porosimeter "NQ", and of the Pycnometer "K" are approximately the same size, since the same piece of core is used in all the tests. It is upon this principal that this apparatus was designed.

This modified Soxhlet extractor tube has ground joints at both the upper and lower ends. The upper joint is female and takes the male joint of the condenser "A", while the lower joint is male and fits into the female joint at the upper end of the receiving flask "E". The extraction tube "C" contains a three-way stopcock in the lower part of the syphon tube, or side arm, and it is to the use of this stopcock that this extraction tube owes its advantage over the ordinary extractor.

Part "E" is a graduated receiver, or flask, the lower end of which is constricted for approximately four inches of its length to a diameter of one-half inch, which makes the total capacity of the constricted portion of the tube approximately 10 ml. This is graduated into 1/10 ml. subdivisions for accuracy in reading the extracted oil which is collected in the receiving tube. The capacity of the flask "E" is 250 ml. to the top graduation mark.

The electric heater "H" is so shaped as to accommodate the flask with the heating elements arranged to give the maximum windings and the maximum temperature at the point of maximum liquid contents. The windings are 200-watt and 40-watt, with individual switch and rheostat control. The coils are so wound that the early heating occurs near the surface of the liquid in the flask which prevents bumping when boiling is first started.

The electric heater boils the liquid and the cooling water circulating through the condenser "A" condenses it and allows it to drip down over the core in the extractor tube "C". The liquid collects in the tube "C" until it overflows through the syphon tube which returns it to the flask "E".

This operation is repeated until the solvent syphons back to the flask clear, indicating that all oil has been extracted from the core. At this time, the three-way stopcock in the syphon tube is turned, which passes the solvent back to its container instead of into the lower flask. The oil which remains in the flask "E" is measured and its volume recorded.

Determination of Pore Space

Following the determination of the oil content of the sample, the section of core is removed from the extractor, dried, and placed in the porosimeter "NQ". The reservoir "R" is filled with mercury and, with the stopcock at the top of the porosimeter open, the reservoir is raised until the porosimeter is filled with mercury to a point above the stopcock. The stopcock then is closed and the reservoir "R" lowered until the level of mercury in the porosimeter falls below the core sample in the chamber. This process draws a

vacuum on the core and the air in the connected pore spaces in the sample expands to fill this vacuum. Then the reservoir is raised and the air withdrawn from the pore spaces is trapped in the graduated tube below the stopcock and its volume is read to 1/20 ml.

The air thus withdrawn exerts a partial pressure and the pressure thus exerted prevents all of the air from being withdrawn from the pore spaces in one evacuation of the chamber. Therefore this air is allowed to escape and the entire procedure repeated several times until the air remaining is so small an amount as to be ignored. The volumes of air withdrawn, when added together to give the total volume of air withdrawn from the pore spaces of the sample, are equal numerically to the total inter-connected pore spaces.

Determination of Total Volume of Cores

The pore spaces have been filled with mercury as a result of the withdrawal of the air in the pore spaces during the process of determining the porosity of the core, and no further treatment of the core sample is necessary before obtaining its total volume which is measured by the mercury pycnometer.

The pycnometer is filled with mercury and the excess forced out through a hole in the stopper, thus insuring a definite volume. The stopper is removed and the core placed on top of the mercury, and the stopper again forced in place, care being taken to exclude all air. The mercury displaced by the sample is caught in a beaker and measured in the graduated cylinder "L".

Determination of Salt Content

The same core sample is crushed and leached in 100 cc. of distilled water. This is titrated with silver nitrate, using potassium chromate as an indicator. The salt content can be reported as parts per million based on total volume of core, based on total effective pore space, or on pore space not occupied by oil. The last method would allow comparable determinations to be made for various wells and fields.

It is believed that a definite salt content value beyond which oil production would not be profitable, based on brine concentration in the available pore spaces of the producing sands, could be arrived at by correlation of numbers of test core results.

As the final operation, the grain size percentages are determined on a separate sample by crushing 100 cc. of the sample to grain constituents and reporting the cubic centimeters retained on each screen as percent retained on that screen. The screens used are 30, 40, 50, 60, 80, and 100 mesh.

Evaluation of Results

The amount of oil extracted from the core is, in itself, of very little value in evaluating the worth of the formation from which the core was taken. The volume of the oil must be taken in its relation to the total volume of the core from which it was extracted and in its relation to the volume of the pore space within that core. The numerical relationship between the extracted oil and the intergranular pore spaces from which it was extracted is taken as the degree of saturation of the core. This figure is essential in figuring potential yields from a given sand bed and should be studied carefully in determining well spacing in new fields.

Stated simply, the volume of oil extracted divided by the total volume of the core used gives the percent of oil present. The volume of pore space divided by the total volume of sample gives the percent porosity. The volume of oil divided by the volume of pore space gives the percent of saturation. The re-

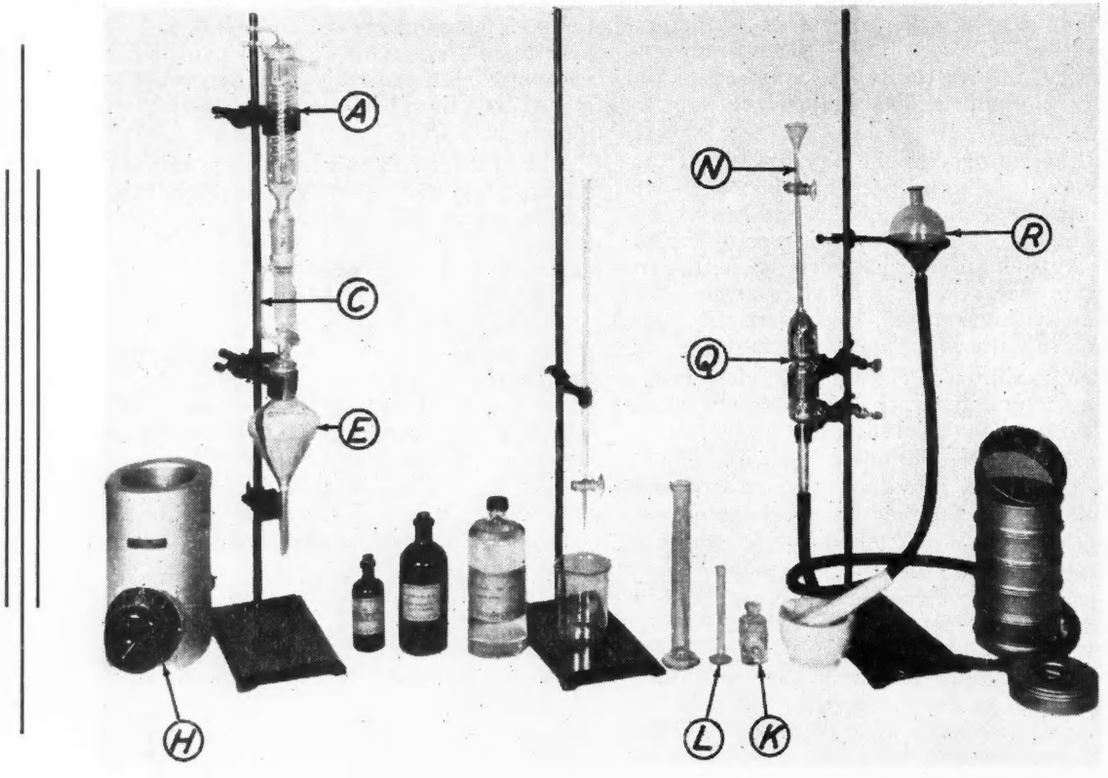


FIGURE 1

maining pore space is occupied by gas, water, or both.

Tables 1 and 2 show results of tests made with this apparatus on cores from producing formations in Texas, Louisiana, and Oklahoma.

In studying the tables of results obtained through the use of this apparatus, special attention to total results is necessary. Sample No. 9, for example, shows a very high percent oil content, but when we note that the porosity shown is only 17.8 percent, this percent oil does not look so large. This core, however, is from a producing well in the Oklahoma City Field and the well may be termed a fair producer. The best core of the 11 reported is No. 7, which is a very saturated East Texas Woodbine core. The oil content is remarkable and the porosity is rather high even for this field.

Cores Nos. 3 and 4, were taken from non-producing formations above the producing sands and show no trace of oil, though they are more porous than most overlying beds. The sands were not directly adjacent to the producing formations, however, and that may account for the porosity indication.

No. 11, which gave a porosity of 41.38, was a sandstone surface sample from Oklahoma. The sandstone was immersed in crude oil under a vacuum for 30 minutes and was allowed to remain exposed to the air for 24 hours before being tested. The 41.39 percent porosity looks very high but this particular sample was of an exceedingly porous nature, more so than any core sample examined. The purpose of including it in this table of results is to show the effect of leaving a sample exposed to the air before testing it.

This sample had been thoroughly saturated with oil under vacuum only 24 hours before being tested, and yet it showed only 23.7 percent oil content.

Sample No. 5, from the Caddo oil field, shows very close to a minimum finding for a fairly good well.

It can be seen from the table that cores with porosities as low as 17 percent will make good wells provided that the degree of saturation is sufficiently high. It would require several hundred cores to show just how low the porosity could be and still make a producer, and about the same number of core samples should show about the minimum oil percentage that would make a producing well. With this data the problem of whether or not a producer could be expected should be simplified greatly and the work of the petroleum engineer made easier.

The following quotation is from a paper prepared by the Production Engineering Department of Shell Petroleum Corporation:

"Effective porosity" has been defined[1] as "the volume of interparticular spaces which communicate with passages of sufficient size to permit the entrance or recovery of gas or oil, expressed as a percentage of the total rock volume." It would appear that the absolute porosity, which is determined by most porosity determination methods and included the total of all interparticular spaces regardless of whether they communicate with passages of sufficient size to permit the entrance or recovery (particularly recovery) of gas or oil, when used in estimating reserves would tend to give erroneously high estimates. Consequently it is believed that only the effective pore space should be considered.

"This may be measured in consolidated sands or sandy shales by any accepted method. For unconsolidated sands it will be necessary to make a study of type cores, by screening and microscopic examination, of the texture of the sand and the size and shape of individual sand grains. Under conditions of enormous pressures upon formations, it is highly probable that a most compact arrangement of the grains will be approached even though such arrangement will not be seen in unconsolidated sands under atmospheric conditions. The absolute porosity for uniformly sized spherical sand grains in the most compact arrangement can be shown to be 25.97 percent; however, there will be neither a uniform size of grains nor will they be spherical in shape. By means of screening, the uniformity coefficient, defined[2] as the ratio of size of grain that has 60 percent of the sample by weight finer than itself to the size that has 10 percent finer than itself. Similarly, the "effective size" defined[3] as the size (expressed in terms of millimeters) at the point where 10 percent of the material by weight is composed by smaller grains and 90 percent of larger grains, can be determined.

"It has been found that the effective size together with the uniformity coefficient define rather closely the size and uniformity of a sand according to Fettke. Consequently, the accurate determination of those two factors would enable a comparison to be made between consolidated and unconsolidated sands in which those factors are of the same magnitude, whence a more accurate estimate of the effective porosity could be made. For greater refinement in such an estimate the comparative degrees of rounding and of pitting upon the surface of the individual grains should be determined and further correction made."

The above quotation was given to show the attention these factors are receiving from the major companies and it is to be hoped that the future will see much done in the way of correlation work with this equipment and method.

TABLE 1
Core Characteristics

Core No.	Total Volume	Oil Content	Percent Oil Content	Pore Space	Porosity	Salt Content PPM
1	12.1	1.0	32.25	3.10	25.62	917
2	12.8	.85	23.94	3.55	27.73	750
3	13.0	.00	00.00	2.45	18.85	1092
4	11.3	.00	00.00	1.25	11.06	1194
5	11.6	.65	22.03	2.95	25.42	715
6	12.8	.8	24.61	3.25	25.39	554
7	11.8	2.2	51.76	4.25	36.01	....
8	13.8	1.6	45.71	3.50	25.36	....
9	13.2	1.1	49.78	2.35	17.80	....
10	12.6	1.8	43.90	4.10	32.54	....
11	12.2	1.2	23.76	5.05	41.39	....

TABLE 2
Relative Screen Sizes of the Sand Grains

Core No.	Ml. Crushed Material Used	Ml. Retained on Each Sieve: 30	40	50	60	80	100	Over 100
1	100	.1	.9	.8	2.3	4.6	28.9	61.7
2	100	.0	.3	1.2	11.2	16.4	11.7	59.1
3	100	.0	.1	.7	2.6	7.3	21.0	68.1
4	100	.0	.2	1.0	5.1	8.0	36.0	49.5
5	100	.0	.3	1.6	7.3	19.7	15.3	55.6
6	100	.0	.4	1.2	5.8	9.8	19.6	63.3
7	100	.0	.6	2.0	14.5	24.7	25.3	32.5
8	100	.1	.9	2.5	9.5	13.8	31.6	41.5
9	100	.0	.3	1.7	5.9	11.4	26.2	54.3
10	100	.0	.2	.3	3.4	6.3	19.8	69.7
11	100	.8	2.6	5.3	14.7	21.3	28.7	26.5

[1] C. J. Coberly & A. B. Stevens, Development of Hydrogen Porosimeter, Transactions A.I.M.E. Vo. 103, 1933.
[2] Charles R. Fettke, Ten Years Application of Compressed Air at Hamilton Corners, Pa., Petroleum Development and Technology, 1927.
[3] Ibid.

A PRESSURE RELEASE FEED-BACK OVERCOMES FREQUENT TROUBLE ON

Pipe Line Manifold

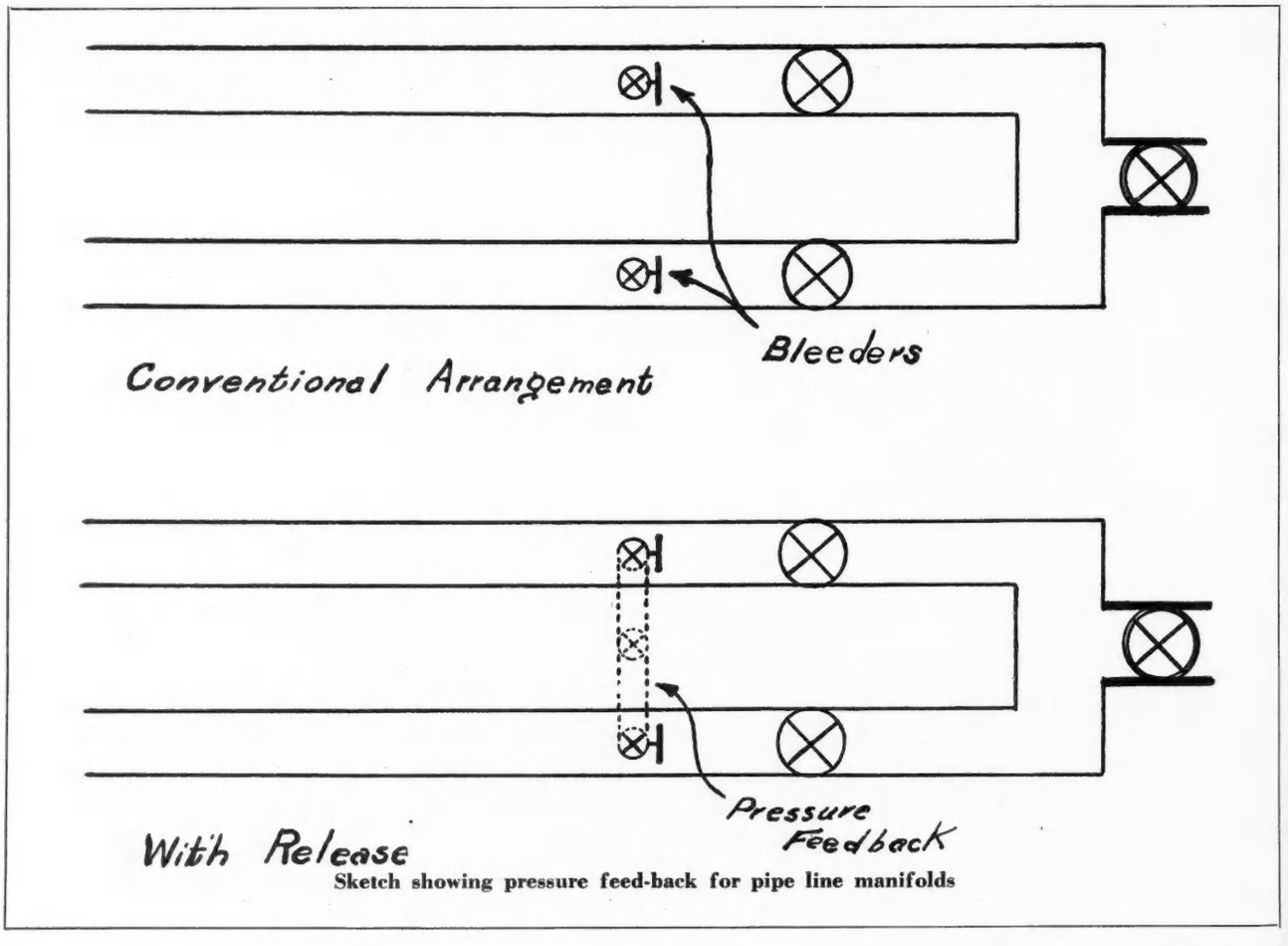
By FRANK B. TAYLOR, Staff Writer

A DIFFICULTY frequently experienced in the facile operation of 10-inch and larger gates and valves, due to a considerable difference of pressure against the two sides of the tongue, can be eliminated by the use of a feed-back as shown in the accompanying photograph. To install such a device, it is not necessary to change the standard equipment in general use. Also, by an arrangement slightly different than that in the illustration, the desirable feature of having bleeders at each end of the runs or manifold, may be retained.

In making orifice plate changes, inspections, or repairs it is necessary to bleed the run, and in order to repack, the valves controlling the run which have line pressure against one side of the disc and atmospheric pressure against the other, must be opened. This difference in pressure tends to freeze the larger valves even if well lubricated, making their operation difficult.

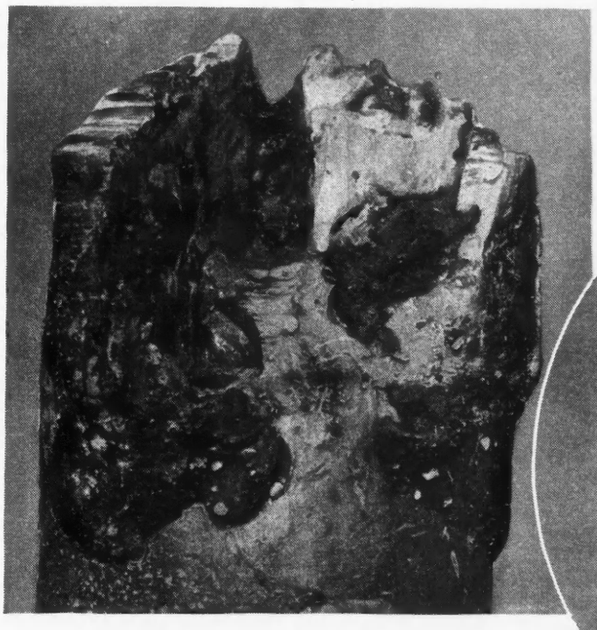
The customary setup on a compound run includes two blowoffs located at either end. These are valve-controlled. To utilize the pressure feedback, the blowoff valves at one end are connected to an overhead bypass. In order to load a run previously drained to atmosphere, one of the valves formerly used for bleeding is opened, and also one of the valves on a run which is still pressured. This equalization of the pressure on both sides of the gates controlling the run allows its free operation.

In order to retain the customary double blowoff, it is only necessary to add a valve-controlled riser to the common bypass connecting the individual runs. Many station manifolds which must periodically be drained may be likewise equipped. Single runs, or single sections cannot be handled in this manner, and provisions for pressure release are usually incorporated in a main valve bypassed by a smaller control.



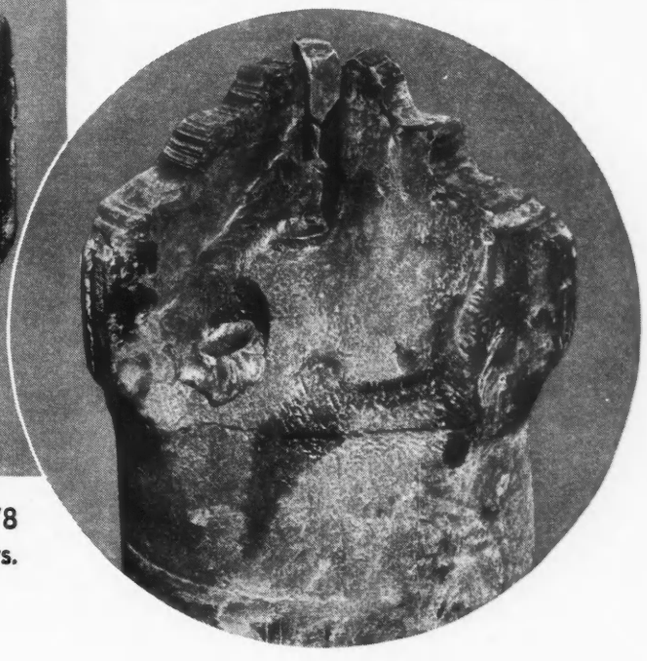
Sketch showing pressure feed-back for pipe line manifolds

HAYSTELLITED BITS DRILL STRAIGHT HOLES FAST



Above: This Haystellited bit drilled 3678 feet through hard sand in 62½ hours.

Below: This Haystellited bit drilled 3009 feet through hard sand in 60 hours.



● Each of these two bits drilled over three thousand feet of out-to-gauge holes at Tomball Field, Texas—and drilled this footage at an average speed of nearly a foot a minute. Both bits were hard-set with Haystellite Inserts and faced with Haystellite Composite Rod. No reaming was necessary before the casing was set.

This, and similar outstanding performance records of Haystellited bits in many other fields indicate the results that you too can expect when you use Haystellite Inserts and Haystellite Composite Rod according to the simple procedures explained in "Haynes Stellite Products in The Oil Fields." This valuable 36-page book is available to you without cost or obligation. Write the nearest office for a copy today.

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Markets Weaker

PRICES SAG AS DEMAND FAILS TO BALANCE HEAVY SUPPLIES

THE action of the markets the past week was somewhat disappointing to some, as tank car prices sagged lower on kerosene and some grades of gasoline in certain sections of the Mid-Continent, while it had been hoped that the week would bring further stiffening of prices. It was evident from the price situation that the markets are being held back by the large inventories of gasoline and the comparatively small headway that is being made in reducing those stocks.

The latest weekly report of the American Petroleum Institute showed that crude runs were increased 15,000 barrels to a daily average of 2,950,000 barrels for the week ended June 6, and in the meantime there was but a nominal reduction of gasoline stocks. During the week the total stocks of finished and unfinished gasoline were reduced 335,000 barrels, or to 70,639,000 barrrels. In the previous week a reduction of more than a million barrels was effected.

Crude Output Moderate

The idea that the gasoline stocks and refinery operations are greatly affecting the markets is borne out by the fact that the crude production situation is comporatively favorable. Under the June allowable fixed in the leading producing states, the national production of crude is scheduled to be in fair balance with demand, although crude stocks probably will not be reduced, as recommended by the Bureau of Mines. So far this month, the actual crude production has been substantially above the daily average recommended by the federal government. But is is customary for several of the leading producing states to produce above allocations in the opening portion of each month and then to compensate later in the month by curtailing output rather sharply.

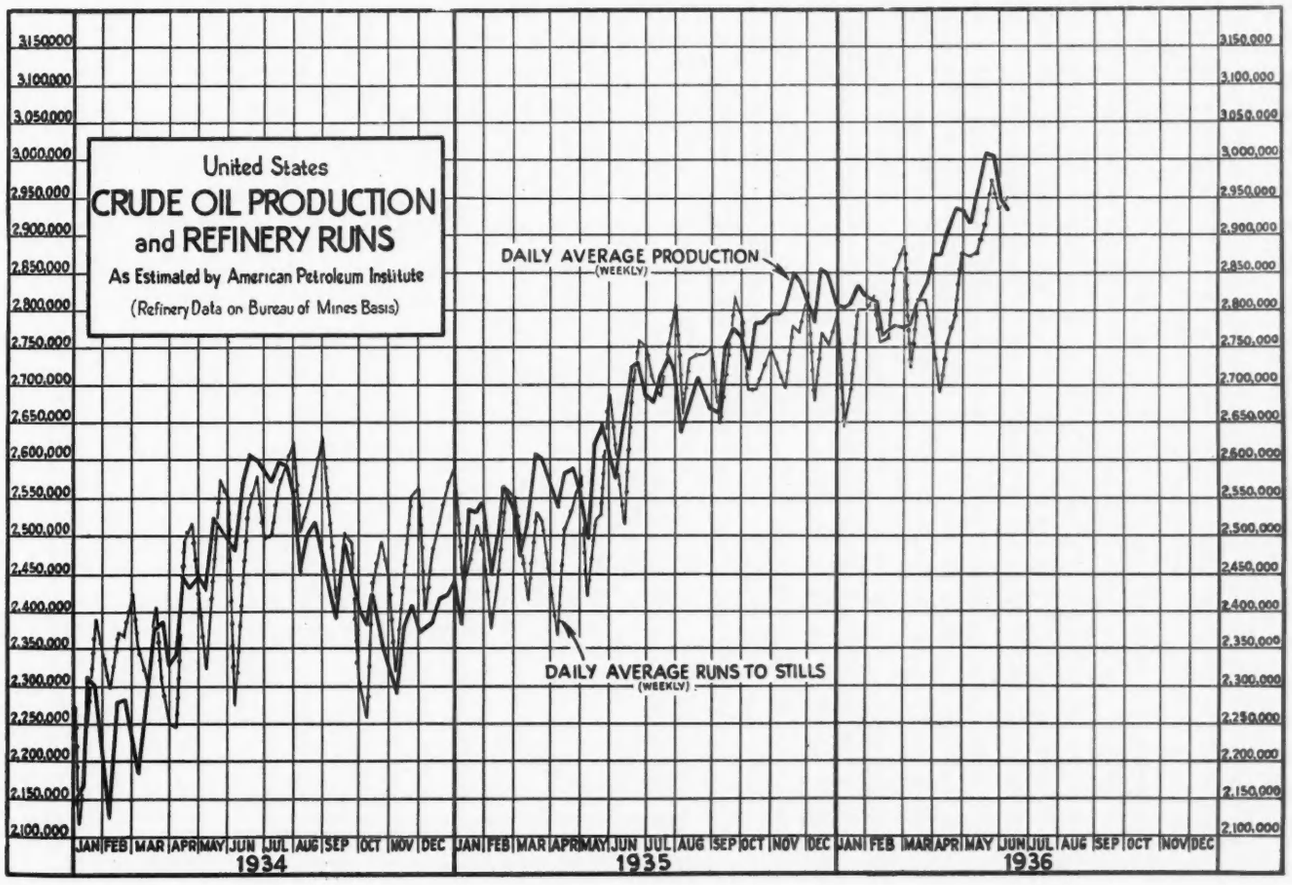
Although gasoline tank car prices late last week were an eighth cent lower in some instances, most of the prices remained the same as in the previous week. Purcahses continued comparatively light in the open market, and movements on contract basis also were reported at relatively low levels.

Due to offerings of some surplus material, third grade gasoline was available last week for an eighth cent a gallon less than in the previous week in East Texas and West Texas. The price had sagged to 4⅝ cents a gallon for fully tendered gasoline in East Texas, compared with a minimum of 4¾ cents a week previously.

In North Texas the third grade held unchanged at 4¾ cents, but the 63 to 67 octane U. S. motor gasoline was off one eighth cent at 5⅜ to 5½ cents, while 68-70 octane was unchanged at 6 cents.

In the meantime, the top price f.o.b. Oklahoma refineries on 68-70 octane U. S. motor gasoline was off an eighth cent, with a range of 6 to 6⅛ cents prevailing; but prices were unchanged on the 62 octane and below at 4¾ to 5 cents and the 63-67 octane at 5⅜ to 5⅝ cents.

In the Chicago market prices all were unchanged, at 4¾ to 5 cents a gallon for the U. S. motor gasoline of



62 octane and below, 5 to 5½ cents for the 63-67 octane, and 5⅝ to 6 cents for the 68-70 octane.

Kerosene Prices Lower

Kerosene prices were lower in the Chicago territory and in East Texas, having declined one eighth cent from the previous week's levels. In the Chicago market the new prices of the 41-43 water white kerosene were 3¾ to 4 cents a gallon and of the 42-44 water white grade, 4 to 4¼ cents. The 41-43 grade was off to 4 to 4¼ cents in East Texas. At Oklahoma refineries the two grades held at 3⅞ to 4⅛ cents and 4⅛ to 4⅜ cents.

East Texas Tank Car Shipments

Week Ending June 7, 1936

PRODUCTS	No. Cars	Estimated Gallons
Gasoline	635	5,151,042
Fuel Oil	189	1,832,993
Casinghead Gasoline	254	2,168,421
Distillate	44	356,048
Kerosene	35	279,176
Gas Oil	24	196,670
Naphtha	11	87,995
Residuum	10	81,029
Total	1,202	10,153,374
Total Previous Week	1,220	10,354,540
Interstate	516	.....
Coastwise	393	.....
Intrastate	293	.....
Total	1,202	.....

HOT OIL RUNS

East Texas refiners using 15,000 barrels daily

Tyler.—East Texas refiners are currently processing about 15,000 barrels of illegally produced crude daily in spite of the diligence displayed by state and federal authorities in tracking down violators. These enforcement agencies continue to improve in efficiency in combatting the efforts of violators to move contraband products from the district. Federals have been successful in blockading illegal interstate shipments without resorting to prosecution by thoroughly investigating each tender application.

The railroad commission's staff has a greater task in curbing intrastate movement of products by rail and trucks, and lately has caused the arrest of a large number of tank truck operators caught with gasoline loads without proper manifests.

Market for fully tendered gasoline turned out by East Texas refineries has improved sufficiently to indicate that a slight advance in price may materialize shortly. U. S. motor fuel sold on consignment to the majors' buying pool is netting the plant owners 4⅝ cents per gallon. Refiners are expecting this price to be advanced to five cents but do not anticipate any appreciable rise beyond this level during the summer motoring season because of the abundance of crude that is available to plants in other districts.

RETAIL PRICE UP

California independent adopts higher posting

LOS ANGELES.

THERE has been practically no change in the marketing situation in California the past week. In fact, if there has been any change, it has been for the better in marketing circles.

One of the marketing companies, classed as a major, will receive a cargo of 77,000 barrels of natural gasoline from the Gulf Coast within the next few days. No information is available as to cost of this cargo, but it moved from Houston May 28.

Several of the more important independent refiners have adopted a policy of forcing their resellers to adhere to a higher retail price for their products, with especial reference to gasoline, and applying to Los Angeles Basin, or rather Southern California. One of the larger independents boosted its retail gasoline price to 15.5 cents, against a settled Southern California price of 16 cents for major company third grade.

The situation is fairly well in hand and no trouble is expected during early summer.

FIVE INDICTED

On charges of forging Conroe oil tenders

Conroe.—Four Houston oil men and a former state employe were indicted here June 9, by the Montgomery County grand jury on charges of conspiracy to forge oil tenders and using forged oil tenders for transportation of oil produced in excess of the allowable set by the railroad commission for certain wells in the Conroe field.

The five men indicted by the Montgomery grand jury were: Frank Bennett, president of the Bennett Oil & Gas Company; D. D. Felman, president of the Feltex Oil Corporation; H. E. Hines, independent oil operator; Otis H. Gibson, an official of the Crescent Oil & Marketing Company, and M. D. Carter, former employe of the Texas Railroad Commission. The five men were named jointly in the indictments.

At the close of the week two of the five Houston oil men had made bond and a third had notified District Attorney W. C. McClain that bond would be made. McClain said that the case likely would be tried before the September term of court.

District Attorney W. C. McClain said that the indictments involved three tenders used in the transportation of oil produced in excess of the allowable set by the railroad commission for certain wells in the Conroe field, Montgomery County, and that the grand jury had been investigating 12 tenders involving around 114,000 barrels of crude oil. The grand jury was aided by O. Culberson, chief of the pipe line division of the railroad commission; E. L. Green, Jr.; J. R. Lewis of the department of interior's federal petroleum agency at Tyler; and G. Lacy, Houston investigator.

Summary of Wells Completed in the United States Week Ending June 13, 1936

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total Completions 1936	Total Completions this Date, 1935
Alabama	....	....	....	....	.....	2	3
Arkansas	3	....	....	3	.....	40	81
California	32	24	2	6	11,985	480	363
Colorado	1	1	....	....	1,148	5	5
Illinois	....	....	....	....	.....	4	8
Indiana	....	....	....	....	.....	99	92
Kansas	32	22	1	9	15,874	685	640
Kentucky	....	....	....	....	.....	117	73
Louisiana	31	19	1	11	17,551	476	345
Michigan	28	11	8	9	2,060	338	198
Mississippi	....	....	....	....	.....	2	12
Montana	3	3	0	0	270	54	47
New Mexico	13	11	0	2	21,770	242	125
New York	....	....	....	....	.....	....	....
Ohio	10	6	....	4	17	839	619
Oklahoma	63	44	1	18	152,938	1,230	1,081
Pennsylvania	....	....	....	....	.....	....	69
Texas	236	180	5	51	411,256	5,536	5,415
Utah	....	....	....	....	.....	....	....
West Virginia	14	3	6	5	7	316	235
Wyoming	2	1	....	1	1,800	22	26
Total this week	468	325	24	119	636,676	10,488	9,438
Total last week	484	348	28	108	408,189	10,020	8,963
Total this year	10,488	6,973	1,004	2,511	9,856,613	....	....

Comparison of Permits Granted for New Wells

STATE—	Week Ending June 13	Total this Mo.	Total this Year	Total this Date Last Year	1935 Year Total
Arkansas	1	3	49	16	70
California	19	47	421	234	925
Louisiana	20	42	560	353	846
Kansas	30	55	824	446	1,204
Michigan	11	29	311	213	749
Oklahoma	46	104	1,045	963	2,311
Texas	250	644	6,513	4,842	10,800
Total	377	934	9,723	7,067	16,964

CRUDE OUTPUT UP
United States production higher during past week

UNITED STATES crude oil production during the past week, ended June 13, averaged 2,979,075 barrels daily, according to the regular reports to THE OIL WEEKLY. That was 32,550 barrels a day more than in the previous week. It was 140,775 barrels a day more than the recommendation of the United States Bureau of Mines.

The increase as compared with the previous week was the result of gains in Oklahoma, Kansas and California, that materially outweighed slight decreases in Louisiana, Texas and New Mexico.

Oklahoma's production last week averaged 567,250 barrels daily, which was 19,800 barrels a day more than in the previous week, and 14,750 barrels a day more than the Bureau of Mines allocation to the state for June. However, Oklahoma's state allowables for June are such as to hold the state's output below the federal quota during the month.

Kansas output last week averaged 152,325 barrels daily. It was 17,175 barrels a day higher than in the previous week, but still 775 barrels under the Bureau of Mines recommendation. Like Oklahoma, the state has June allowables under the federal allocation.

Louisiana production last week averaged 224,200 barrels per day, or 6925 barrels a day less than in the previous week. The new rate of output was 48,500 barrels a day above the Bureau of Mines recommendation.

California last week averaged 584,000 barrels daily. That was 5500 barrels a day more than in the previous week, and 48,500 barrels a day more than the federal allocation.

Texas production last week averaged 1,147,300 barrels daily, or 1300 barrels a day less than in the previous week, and 21,600 barrels a day more than the federal allocation for June.

New Mexico output last week averaged 73,200 barrels daily. That was 300 barrels a day less than in the previous week, but 4900 barrels a day more than the Bureau of Mines estimate of demand.

RODESSA RUNS

Shreveport.—Average pipe line runs from Rodessa field last week were 55,554 barrels daily, with runs to refineries amounting to 2579 barrels and tank car shipments, 234 barrels.

Pipe line runs by companies follow: Arkansas Pipe Line Corporation, 6553 barrels; East Texas Pipe Line Company, 5377 barrels; Gulf Pipe Line Company 10,591 barrels; Magnolia Pipe Line Company, 13,749 barrels; Standard, 18,506 barrels, and The Texas Pipe Line Company, 419 barrels.

Runs to refineries were: Eastern Texas, 120 barrels; Griswold, 2161 barrels, and North Caddo, 298 barrels. Tank car shipments were made by Griswold to his plant in Shreveport.

Daily average production of the field was 59,417 barrels, with 1050 barrels run daily to storage.

United States Crude Oil Production
Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in June)	ACTUAL PRODUCTION: BARRELS DAILY FOR WEEK ENDING June 13	June 6
TEXAS—			
Texas Panhandle	.....	62,100	63,100
North Texas	.....	58,800	59,100
West Central Texas	.....	25,400	25,300
West Texas	.....	178,200	177,800
East Central Texas	.....	52,900	51,900
*East Texas Field	.....	437,500	436,800
†South Texas	.....	84,800	82,800
†Texas Gulf Coast	.....	247,600	251,800
*Total Texas	1,125,700	1,147,300	1,148,600
OKLAHOMA—			
Oklahoma City	.....	151,275	134,775
Seminole Area	.....	143,250	142,000
Tatums	.....	3,350	3,325
Lucien	.....	12,950	13,100
Fitts	.....	50,700	52,175
Edmond	.....	12,825	10,500
Others	.....	192,900	191,575
Total Oklahoma	552,500	567,250	547,450
KANSAS—			
Ritz-Canton	.....	6,225	6,400
Voshell	.....	2,850	3,075
Nikkel-Hollow	.....	3,900	3,950
Sedgwick	.....	5,425	5,550
Burrton-Haury	.....	11,625	12,400
Lorraine	.....	7,400	4,975
Oxford	.....	5,200	6,650
Others	.....	109,700	92,150
Total Kansas	153,100	152,325	135,150
LOUISIANA—			
North Louisiana	.....	75,800	82,625
Louisiana Gulf Coast	.....	148,400	148,500
Total Louisiana	175,700	224,200	231,125
ARKANSAS	31,800	29,600	30,000
CALIFORNIA—			
Long Beach	.....	68,000	56,600
Santa Fe Springs	.....	44,000	41,600
Huntington Beach	.....	37,500	36,000
Dominguez	.....	26,000	26,000
Inglewood	.....	12,500	12,500
Ventura Avenue	.....	34,500	33,000
Seal Beach	.....	7,500	8,000
Midway-Sunset	.....	61,000	54,000
Elwood	.....	12,500	12,500
Kettleman Hills	.....	78,000	77,000
Mountain View	.....	28,000	28,000
Playa del Rey	.....	13,500	13,500
Others	.....	161,000	179,800
Total California	535,500	584,000	578,500
MOUNTAIN STATES—			
Wyoming	37,800	36,500	36,200
Montana	13,000	17,400	17,100
Colorado	4,700	4,600	4,500
Total Rocky Mountain States	55,500	58,500	57,800
NEW MEXICO	68,300	73,200	73,500
EASTERN STATES	103,200	110,100	110,800
MICHIGAN	37,000	32,600	33,600
*Total United States	2,838,300	2,979,075	2,946,525
*Surreptitiously produced oil in East Texas, not included in above figures, estimated at	.....	15,000	15,000
Grand Total, including surreptitious production	.....	2,994,075	2,961,525

† Coastal Section of South Texas is included with Texas Gulf Coast.

Crude Runs to Stills, Stocks of Finished and Unfinished Gasoline and Gas and Fuel Oil, and Cracked Gasoline Production, Week Ended June 6, 1936

(Figures in thousands of barrels of 42 gallons each, as reported to American Petroleum Institute)

DISTRICT	Daily Refining Capacity			Crude Runs to Stills		Stocks of Finished and Unfinished Gasoline				Stocks of Gas and Fuel Oil			Daily Charging Capacity of Cracking Units			Cracked Gasoline Production
		Reporting				Finished								Reporting		
	Potential Rate	Total	%	Daily Average	% Operated	At Refineries	Terms. Trans. Pipe Lines	Unfinished in Naphtha Distillates	Total Finished and Unfinished	Gas, Oil & Distillate	Residual Fuel Oil	Total	Potential Rate	Total	%	Daily Average
East Coast	612	612	100.0	540	88.2	7,087	11,672	984	19,743	3,854	4,951	8,805	534	534	100.0	103
Appalachian	154	146	94.8	100	68.5	1,339	1,095	275	2,709	267	204	471	79	78	98.7	20
Ind., Ill., Ky.	442	424	95.9	397	93.6	6,673	2,700	858	10,231	1,704	2,058	3,762	349	348	99.7	135
Okla., Kans., Mo.	453	384	84.8	302	78.6	4,195	2,335	644	7,174	638	2,430	3,068	256	228	89.1	61
Inland Texas	330	160	48.5	98	61.3	1,190	104	217	1,511	312	1,386	1,698	148	105	70.9	24
Texas Gulf	680	658	96.8	609	92.6	5,221	237	2,101	7,559	3,787	3,575	7,362	399	393	78.5	155
Louisiana Gulf	169	163	96.4	124	76.1	812	500	259	1,571	1,028	996	2,024	77	74	96.1	24
North La.,—Ark.	80	72	90.0	35	48.6	209	106	127	442	59	348	407	46	44	95.7	8
Rocky Mountain	97	60	61.9	41	68.3	1,371	.....	90	1,461	136	594	730	46	39	84.8	10
California	852	789	92.6	511	64.8	9,817	2,567	1,122	13,506	.....	.....	71,636	280	280	100.0	74
Reported	.....	3,468	89.6	2,757	79.5	37,914	21,316	6,677	65,907	.....	.....	99,963	.....	2,123	95.9	614
Estimated Unreported	.....	401	.....	193	.....	3,033	1,425	274	4,732	.....	.....	2,941	.....	91	.....	41
*Estimated Total U. S. June 6, 1936	3,869	3,869	.....	2,950	.....	40,947	22,741	6,951	70,639	.....	.....	102,904	2,214	2,214	.....	655
*Estimated Total U. S. May 30, 1936	3,869	3,869	.....	2,935	.....	41,921	22,126	6,927	70,974	.....	.....	102,188	2,214	2,214	.....	665
U. S. B. of M., June, 1935	.....	.....	.....	2,724	.....	†32,499	†20,642	†6,366	†59,507	.....	.....	†103,674	.....	.....	.....	586

* Bureau of Mines basis currently estimated. † As of June 30, 1935.

Good Program

PENNSYLVANIANS DISCUSS ECONOMICS AND OPERATION

OIL CITY.

THE outlook for the Pennsylvania oil industry during the coming year will be discussed fully from all angles by speakers on the program for the thirteenth annual meeting of the Pennsylvania Grade Crude Oil Association to be held at State College, Pennsylvania, next week. Members of the association, located in all sections of the country, are expected to attend the two-day sessions beginning Thursday, June 18; most of the membership is comprised of refiner and producer companies in the Pennsylvania grade region, but the activities of jobber and marketer members extend to most of the states of the Union.

T. P. Thompson, Jr., of Bradford, who is president of the association, will speak specifically of future events when he opens the meeting with his address: "The Year Ahead," at the luncheon session on Thursday. Thompson will review the current activities of the association in its relation to what may be expected during the next year.

Two other speakers have chosen subjects which are directly related to the immediate future of the association. C. C. Hogg of Pleasantville, president of National Petroleum Company, will describe the work which is being done in production research in the School of Mineral Industries of the College. This research, financed jointly by the association and the Commonwealth of Pennsylvania, is expected to have considerable bearing on the development of secondary recovery projects in the region. Dean F. C. Whitmore of the School of Chemistry and Physics at the College, speaking on the subject, "How We Can Use What We Have Learned," will tell of practical applications to be made from research in petroleum technology.

Other speakers, representing the three branches of the association's membership, refining, marketing, and production, will be Dr. H. H. Kynett of Philadelphia, advertising counsel for a refiner member; C. L. Suhr, Oil City, chairman of the board of Pennzoil Company and president of the National Petroleum Association; J. T. McCoy, Bayonne, N. J., chief chemist of Tide Water Oil Company; Dr. M. R. Fenske of the college staff; and Fayette B. Dow, Washington, D. C., vice president and general counsel of the association.

Aonther speaker, a national figure in the industry, will be General Baird H. Markham of New York, director of the American Petroleum Industries Committee. General Markham, whose committee is constantly making surveys of taxation, will speak on the all-important topic of taxes.

During the sessions, members of the association and other visitors will inspect the laboratories at the college where various types of research are being carried on. Directors for the coming year will be chosen at the final business session on Friday.

DIAGRAMS REQUIRED

Federal board gets data before tenders approved

Kilgore, Texas.—Owners of producing properties, pipe lines, reclamation plants and natural gasoline manufacturing plants in the East Texas field must file up-to-date and drawn to scale diagrams of leases, tankage and pipe line outlets with the Federal Tender Board before the end of June, otherwise no federal tenders will be approved after July 1, 1936, according to J. W. Steele, chairman. The diagrams are required under Regulation 16, Order 1, and must be revised each month in order to show any changes taking place.

Wichita.—Offices of Globe Oil & Refining Company and Lario Oil & Gas Company have been established in the Union National Bank Building.

CRUDE OIL PRICE QUOTATIONS

(Figures Represent Basic or Flat Prices—Revised to June 12, 1936)

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Oklahoma-Kansas	28—$0.94	2¢	40—$1.18	1- 9-36
N. and N.-C. Texas	28— .84	2¢	40— 1.08	1- 9-36
Texas Panhandle				
Gray County	34— .86	2¢	40— .98	1- 9-36
Carson-Hutchinson	34— .81	2¢	40— .93	1- 9-36
West Texas				
Ector, Pecos, W'kler Crane, Upton, Howard and Glasscock	29— .76	2¢	36— 90	1-14-36
West Central Texas	28— .84	2¢	40— 1.08	1- 9-36
East Central Texas	28— .91	2¢	40— 1.15	1- 9-36
East Texas	*1.15			1- 9-36
Talco	* .60			4-15-36
Texas Gulf Coast				
Anahuac-Dickinson	30— 1.04	2¢	40— 1.24	1- 9-36
Conroe	35— 1.24	2¢	40— 1.34	1- 9-36
Tomball	*1.30			1- 9-36
Cleveland	*1.00			1-11-34
†Goose Creek, Hull Liberty, Orange, Pierce Junction, Moss Bluff, Raccoon Bend, Sour Lake, Spindletop, Sugarland, West Columbia, Humble, Rabbs Ridge	Below 17— .88	2¢	34— 1.22	1- 9-36
South and S. W. Texas	Below			
Refugio (Light)	17— .88	2¢	34— 1.22	1- 9-36
Refugio (Heavy)	*.90			1- 9-36
Saxet	*.90			1- 9-36
Mirando	*.85			1- 9-36
Pettus	*1.25			1- 9-36
Salt Flat	*.97			1-14-36
Darst Creek	*.97			1-14-36
Port Lavaca	*.97			
Plymouth	*.90			12-17-35
Arkansas				
El Dorado (Light) and Rainbow	25— .78	2¢	40— 1.10	1-10-36
El Dorado East Field and Smackover	*.75			1-10-36

* All gravities—flat rate.
† Gulf Coast prices as posted by Humble Oil & Refining Company.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
North Louisiana	25—$0.78	2¢	40—$1.10	1-10-36
Urania	*.97			1-10-36
South Louisiana	Below			
Lockport	19— .92	2¢	34— 1.22	1- 9-36
Iowa, Cameron Mds.	Below 19— 82	2¢	34— 1.12	1- 9-36
Rocky Mountain States				
Salt Creek	29— .94	2¢	40— 1.18	1-10-36
Elk Basin	*1.28			1- 9-36
Grass Creek (Light)	*1.28			1- 9-36
Grass Creek (Heavy)	* .58			1- 9-36
Big Muddy	*1.11			1- 9-36
Rock Creek	*1.12			1- 9-36
Sunburst	*1.15			6- 5-36
Lance Creek	* .90			1- 9-36
Osage	*1.08			
Cat Creek	*1.07			8-25-33
Cut Bank	*1.45			9-29-33
Pondera	*1.05			9-29-33
Hog Back, N. M.	*1.00			9- 8-33
Lea County, N. M.	*.75			9-29-33
Mid-West States				
Lima	*1.25			1-10-36
Illinois	*1.23			1- 9-36
Princeton	*1.23			1- 9-36
Western Kentucky	*1.23			1- 9-36
Pennsylvania				
Bradford	*2.45			1-13-36
Sw. Pa. Pipe Line	*2.17			1-13-36
Eureka Pipe Line	*2.12			1-13-36
Buckeye Pipe Line	*1.97			1-13-36
Corning Grade	*1.42			1-13-36
Michigan				
Central Michigan	*1.32			1-14-36
Muskegon	*.70-1.00			12-31-32
Canada				
Petrolia	*2.10			9- 9-33
Oil Springs	*2.17			9- 9-33

* All gravities—flat rate.
‡ Average price, all oil sales being to small refineries.

MAJOR PRICE CHANGES

	Penna. (Nat. Tr.)	Mid.-Cont. (36 Gr.)	Calif. (26 Gr.)
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
August 11, 1933	Up 10	.....	.....
August 24, 1933	.....	Up 10	.....
August 30, 1933	Up 15	.....	.....
September 6, 1933	Up 10	Up 10	Up 15
September 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
November 6, 1934	Cut 25	.....	.....
December 6, 1934	Cut 25	.....	.....
January 4, 1935	Up 15	.....	.....
February 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
August 29, 1935	.....	.....	Cut °4
September 6, 1935	Up 5	.....	.....
October 29, 1935	Up 15	.....	.....
November 1, 1935	.....	.....	Up °28
November 18, 1935	Up 15	.....	.....
December 6, 1935	.....	.....	Up °9
January 9, 1936	.....	Up 10	.....
January 13, 1936	Up 15	.....	.....
February 26, 1936	.....	.....	Up '5

CRUDE PRODUCTION TAXES

Oklahoma—Five percent of gross value less royalty interest.

Texas—Two cents or 2 percent, whichever is higher.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Two percent of gross value at well and 3/8 of 1c per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

* All gravities—flat rate.
° Signal Hill 26 gravity.
' Seal Beach 23 gravity.

CALIFORNIA OIL PRICES

(All gravities above those quoted take highest prices of that field. Effective February 26, 1936)

Gravity	Signal Hill	ea Beach Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey	Olinda Brea Canyon	Athens Rosecrans	Elwood Terrace	Torrance	Richfield	Whittier East Coyote La Habra	Montebello	West Coyote Hills	Santa Fe Springs	New Hall McKittrick Kern River Round Mountain	Mountain View	Midway-Sunset Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$.80	$.79	$.78	$.79	$.80	$.76	....	....	$.80	$.76	$.76	$.77	$ .78	.....	$.70	....	$.70	$.70	$.70	....
15-15.9	.80	.79	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
16-16.9	.80	.79	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	70	.70	.70	....
17-17.9	.80	.79	.78	.81	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
18-18.9	.80	.79	.78	.84	.80	.78	....	....	.82	.76	.76	.77	.78	.....	.70	....	70	70	.70	....
19-19.9	.82	.79	.82	.87	.84	.81	....	....	.85	.76	.78	.77	.78	.....	.70	$.70	.74	.74	71	$ 70
20-20.9	.85	.79	85	.90	.88	.84	....	....	.88	.78	.82	.77	.80	.....	.....	70	.78	.78	.72	70
21-21.9	.88	.79	.89	.93	.93	.88	....	....	.91	.80	.85	.77	.84	78	.....	.73	.82	.82	.74	70
22-22.9	.92	.82	.92	.96	.98	.92	....	....	.93	.84	.89	.79	.88	.78	.....	.77	.87	.86	.78	72
23-23.9	.95	.86	96	.99	1.02	.96	$ 84	....	.96	.88	.93	.82	.92	.78	.....	.80	.92	.90	.82	.76
24-24.9	.99	.91	1.00	1.02	1.06	.99	.88	....	.99	.91	.96	.85	.96	.82	.....	.84	.97	.94	.86	.79
25-25.9	1.03	.95	1.03	1.05	1.11	1.03	.93	....	1.02	.95	....	.89	.99	.86	.....	.88	1.01	98	.90	.83
26-26.9	1.06	1.00	1.07	1.09	1.16	1.06	.98	....	1.05	.98	....	.92	1.03	.90	.....	.91	1.06	1.02	....	....
27-27.9	1.10	1.05	1.11	1.12	....	1.10	1.03	....	....	1.02	....	.96	1.06	.95	.....	.95	1.10	1.06	....	....
28-28.9	1.14	1.10	1.14	1.15	....	1.14	1.07	....	....	1.06	....	.99	1.10	.99	.....	.99	1.15	1.10	....	....
29-29.9	1.17	1.15	1.18	1.18	F.O.B.	1.17	1.12	....	....	1.09	....	1.03	1.14	1.03	.....	1.02	1.20	1.14	....	....
30-30.9	1.21	1.19	1.22	1.21	Pipe	1.21	1.17	F.O.B.	....	....	....	1.07	1.17	1.08	.....	1.06	1.25	1.18	....	....
31-31.9	....	....	....	1.24	Line	1.24	1.22	Ship	Kettleman Hills			1.11	1.21	1.12	.....	1.09	1.29	...	....	....
32-32.9	....	....	....	1.27	....	1.27	1.27	....				1.14	1.25	1.16	.....	1.13	1.34	....	....	....
33-33.9	....	....	....	....	....	....	1.32	$1.28		1.19		1.18	1.28	1.20	.....	1.17	1.38	....	....	....
34-34.9	....	....	....	....	....	....	1.37	1.32	....	1.23	....	1.22	1.32	1.25	.....	1.20	.....	....	....	....
35-35.9	....	....	....	....	....	....	1.42	1.35	....	1.27	....	1.25	....	1.29	.....	....	.....	....	....	....
36-36.9	....	....	....	....	....	....	1.46	1.39	....	1.31	....	1.29	....	1.33	.....	....	.....	....	....	....
37-37.9	....	....	....	....	....	....	1.51	1.43	....	1.35	....	1.32	....	1.37	.....	....	.....	....	....	....
38-38.9	....	....	....	....	....	....	1.56	....	....	1.39	....	1.36	....	1.42	.....	....	.....	....	....	....
39-39.9	....	....	....	....	....	....	1.61	....	....	1.43	....	1.40	....	.....	.....	....	.....	....	....	....
40-40.9	....	....	....	....	....	....	1.66	....	....	....	....	1.43	....	.....	.....	....	.....	....	....	....

Edited by
WM. V. GROSS, Associate Editor

Outlook Good

WORLD OIL PICTURE THROUGH SHELL REPORT ENCOURAGING

[*Continued from page 32*]

Iraq, which has already been referred to—rose principally in Mexico, Venezuela and North America. In Mexico the increase was due principally to the further development of the Poza Rica field, whilst that in Venezuela was largely a result of the erection of several improved pumping installations for lifting the oil.

"The net profit for the year 1935 amounted to *f* 54,279,189.18, allowing of a dividend of 10½ percent, after paying 4 percent on the preference shares.

"As our general review indicates, the increased profit for the year arises in part from slight rises in prices in various countries and in part from an increase in our turnover.

"In regard to the principal sections of our industry the following particulars are to be reported:

Netherlands East Indies

"The past year saw no extension of our reserve areas, the necessity for which, however, is becoming more and more urgent, now that in 1935 the results of the exploration deep wells drilled in the contract fields again failed to come up to expectations.

"Negotiations conducted of late years with the government for the purpose of securing new reserve areas are now so far advanced that we are convinced we may look forward to the conclusion in the near future of two agreements granting us the right to carry out exploration work in the so-called Barito and Sangatta blocks, situated in the Southern and Eastern divisions of Borneo.

"The crude oil production in the Netherlands East Indies was:

	1935	1934
	metric tons	
Sumatra	1,442,666	1,580,275
Boreno (excl. Tarakan)	1,008,965	1,094,142
Tarakan	810,794	812,049
Java	451,241	478,702
Ceram	41,862	36,680
N. I. A. M. fields	515,873	476,858
	4,271,401	4,478,706
These figures include the production from the "5a contract" fields, amounting to	1,099,539	1,177,284

"The modernization of our manufacturing installations is being energetically pursued. The new distilling plant at Pladjoe, the erection of which was referred to in our previous annual report, will be completed shortly and will immediately be placed in operation. At this center an up-to-date installation is also in course of construction which will enable us to make the finest grade of aviation spirit, for which, and with good reason, a steadily increasing demand has arisen.

"Measures for further improving the treatment of various oils are also being taken at Pangkalan Brandan.

"Production of fields controlled by N. I. A. M. (Nederl.-Indische Aardolie Maatschappij) was:

	1935	1934
	metric tons	
Djambi fields		
Badjoebang	229,630	200,906
Tempino	145,514	108,241
Kenali Assam	552	.....
Aroebaai fields	134,146	158,585
Boenjoe	6,031	9,126
	515,873	476,858

"The new 8-inch pipe line for the transport of crude oil was put into operation on October 15, 1935; the line, which runs from Tempino to Pladjoe and has a length of 268 kilometers, is already operating at its full capacity of 1800 tons per day.

New Guinea

"On May 23, 1935, an exploration and exploitation agreement was concluded between the Netherlands Indian government and the Netherlands New Guinea Petroleum Company, which is a company formed by the Bataafsche Petroleum Maatschappij, the Nederlandsche Koloniale Petroleum Maatschappij and the Nederlandsche Pacific Petroleum Maatschappij. On July 15, 1935, a group of geologists landed at Sorong to undertake the geological survey of that district. The Royal Netherlands Indian Airways were entrusted with the air mapping of the territory to be explored, comprising a total area of 10,000,000 hectares.

British Borneo

"The crude oil production in British Borneo was:

	1935	1934
	metric tons	
Sarawak	261,188	285,834
Brunei	467,934	387,972
	729,122	673,806

Egypt

"Egypt's production of crude oil in 1935 was 176,436 metric tons, as against 214,671 metric tons in 1934. The asphalt factor at Suez will be modernized, while an installation will be built for the storage of bulk asphalt.

Roumania

"Roumania's total production in 1935 remained on practically the same level as in the preceding year, and amounted to 8,385,000 tons as compared with 8,467,455 tons in 1934.

"An increase of upwards of 4½ percent in the internal consumption of petroleum products resulted in a corresponding reduction of the quantities available for export, which naturally had its effect in strengthening the Roumanian export market. This was enhanced by the fact that the clearing arrangements made by Roumania with various countries, which created the possibility of paying for Roumanian petroleum products without actually providing for an exchange, gave an impulse to the demand for Roumanian products in preference to those from America and other sources. The result was that for the greater part of the year the price level of the Roumanian export market was unusually high in relation to Gulf market quotations, which again furnishes proof that the so-called clearing system only provides a temporary solution of the foreign exchange difficulties.

"In these circumstances the Roumanian oil industry did not feel the effects of the appearance of Iraq petroleum on the market in anything like the same measure as would have been the case under normal conditions.

"On the other hand, this unnatural and largely illusory benefit was taken advantage of by the Roumanian Government to imopse new taxes on the industry.

"Production of our Roumanian subsidiary, the 'Astra Romana,' decreased from 1,701,054 metric tons in 1934 to 1,540,117 metric tons in 1935, or by 9 percent. This decrease is attributable in part to the protracted lawsuits which had to be conducted to consolidate the ownership of an important territory acquired by the "Astra" in the new Bucasni field.

United States of America

"In some respects 1935 witnessed a fundamental improvement in the American petroleum industry. The first six

months of the year were characterized by two crises in the industrial organization scheme, which had been only partially successful during the previous year, when it was based principally upon the N. I. R. A. with its system of codes. This system was successfully assailed by two pronouncements of the U. S. Supreme Court. As a result of these decisions the center of gravity of governmental interference was shifted from the federal to the various state executives.

"Actual application in the separate states of the restrictive measures, whereby an effectual relation between supply and demand and consequently more favorable price situations were finally created, was also strongly promoted by the Interstate Oil Compact concluded between the principal oil-producing states. So far, however, California and Louisiana have not become members.

"On the whole, therefore, the abrogation of the code system has not hampered recovery. In California, the relative judgment of the Supreme Court invalidating and dissolving the laboriously built-up Pacific Coast Petroleum Agency Agreements for the stabilization of the crude oil and gasoline markets led to a great and prolonged increase in the crude oil production and to the dislocation of the price structure of crude oil and gasoline.

"Drilling activities in the United States were greatly increased, principally as a result of contractual drilling obligations and the approaching expiration of many leases, and moreover as a protection against draining of the fields by competitive drilling in adjacent territory, which is a factor of great importance in Texas in particular. It goes without saying, however, that the multiplicity of—often unnecessary—wells is bound to shorten considerably the duration of the oil production of these fields.

"The policy of acquiring promising or already prolific acreage, or of interests therein, was purusued by us in 1935.

"As regards the manufacturing organization, the Shell Union companies did not fail to take steps to insure complete adaptation of the equipment of the refineries to the present demands and those to be expected in the near future; to this end, for instance, the capacity of the cracking facilities at Wood River and Houston was considerably extended and the most up-to-date installations for the extraction of lubricating oils and the working up of cracked gases were acquired and placed in operation.

"The Aguila's (Shell subsidiary) total production during 1935 was 3,148,456 metric tons as against 2,451,478 metric tons in 1934. The Isthmus fields together contributed about 1,485,624 metric tons (compared with 1,367,000 metric tons in 1934), while the Poza Rica field yielded 1,166,078 metric tons (compared with 511,583 metric tons in 1934). Increase in production in Mexico is set off to a large extent by the decreased purchase of Venezuelan crude oil for treatment in the refinery on Aruba. The old fields in the Northern territories (Panuco and Golden Lane), where new drilling would serve no purpose, produced steadily with a slight decrease in yield.

"The Shell refineries at Tampico, Minatitlan and Mexico City worked favorably, except for interruptions due to strikes. Improvements were effected so as to insure treatment by the most up-to-date methods and as economically as possible.

"During 1935 the policy inaugurated by the Mexican government, known as the Six Year Plan, was vigorously pursued. With regard to the petroleum industry in particular, the plan has in view the promotion of state regulation, to a greater extent than heretofore. In consequence of this, the petroleum industry in Mexico is in a transition stage, which as far as the Aguila is concerned, was marked by unstable labor conditions and strikes and which induced a feeling of insecurity with regard to the operation of the petroleum law and the company's pending applications for concessions.

"Just before issuing this report, it appears as though other difficulties relating to the company's concessions and applications under the petroleum law are in a fair way to be settled as a result of recent discussions with the Mexican government.

The crude oil purchased by our Canadian Eagle and treated in the refinery of the Arend Petroleum Maatschappij totaled about 2,830,000 barrels, as against upwards of 3,340,000 barrels in 1934. The cracking reforming installation built here was placed in operation in the latter part of August, 1935. In view of the extension of the manufacturing program it was decided to enlarge the storage capacity by some 500,000 barrels.

The Shell group's production in Venezuela during 1935 was 8,469,447 metric tons, as compared with 8,168,560 metric

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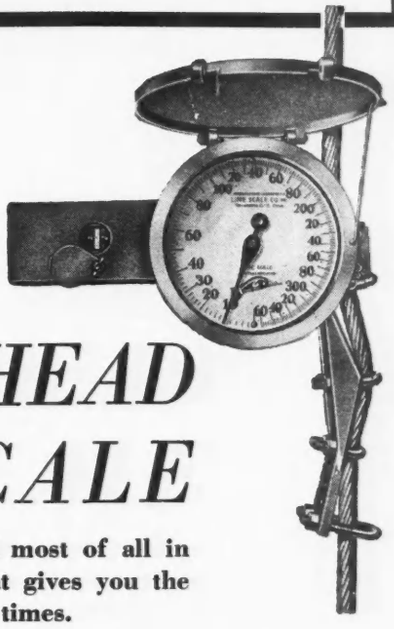

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tons in 1934. This increase was obtained by a further increase in the number of drilling rigs, 13 of which were in operation at the end of 1935 as against 10 at the end of 1934, while the number of pumping installations for lifting the oil was also gradually augmented in 1935.

"Our Caribbean Petroleum Company's crude oil production in Venezuela was 2,275,696 metric tons in 1935, and 2,212,362 metric tons in 1934. During 1935 the number of drilling rigs was gradually increased to 6, as against 4 in 1934, while in June the number was again reduced to 5 rigs, 1 or 2 of which were used alternately for repair purposes.

"Colon Oil Corporation's crude oil production in 1935 was 697,194 metric tons, and 727,435 metric tons in 1934. After 3 drilling rigs had been employed throughout the year 1934, it was decided on January 1, 1935, to discontinue drilling operations. Towards the end of the year under review some existing wells were deepened, for which purpose one of the drilling rigs of the Caribbean Petroleum Company was used. As a result of these deepenings and the raising of the number of pumping installations the production was increased somewhat, although the total production remained below that of 1934.

"Venezuelan Oil Concessions, Ltd.'s crude oil production in 1935 was 5,496,557 metric tons, against 5,228,763 metric tons in 1934.

"The number of drilling rigs was raised to 8, one of which was used for repair purposes in Cabimas, while the others were concentrated on the Lagunillas area. The number of pumping outfits was again increased.

"Towards the close of the year under review the preliminary operations for some trial wells in Tia Juana, situated on the Lake of Maracaibo between Cabimas and Lagunillas, had made such headway that a start could be made with the drilling of the first well.

"Geological and geophysical exploration in Trinidad was energetically proceeded with, while the concession area held was further extended. In combination with Trinidad Leaseholds, Ltd., a new company, "Trinidad Northern Areas, Ltd.," was formed for the joint exploration and exploitation of territories situated in the northern part of the island.

The capacity of the refinery will be increased by the addition of a fifth Trumble furnace. The Shell refinery throughput of crude oil in Trinidad was 466,210 metric tons in 1935 and 360,058 metric tons in 1934.

"Crude oil production of the "Diadema Argentina" S. A. de Petroleo, which amounted to 476,915 metric tons in 1934, was 453,975 metric tons in 1935, of which the Buenos Aires refinery treated 397,900 metric tons, the products obtained being sold to the marketing company Shell-Mex Argentina, Ltd. Crude oil sales to other companies were considerably restricted. Under the new petroleum law an extra royalty was imposed, which will be payable to the government in kind, on the basis of the quantity of crude oil produced, and which has been fixed for the "Diadema" production at 12 percent. The Diadema will energetically oppose the collection of this royalty, as its imposition with regard to production obtained from existing concessions is in their opinon a volation of the Argentine constitution.

Iraq

Exploitation of the Kirkuk field by the Iraq Petroleum Company, Ltd., proceeded normally. During the past year 3,639,265 metric tons of crude oil were produced, our group's share of which was 799,501 metric tons, compared with 978,011 and 214,857 metric tons respectively for 1934.

OUTLOOK BETTER

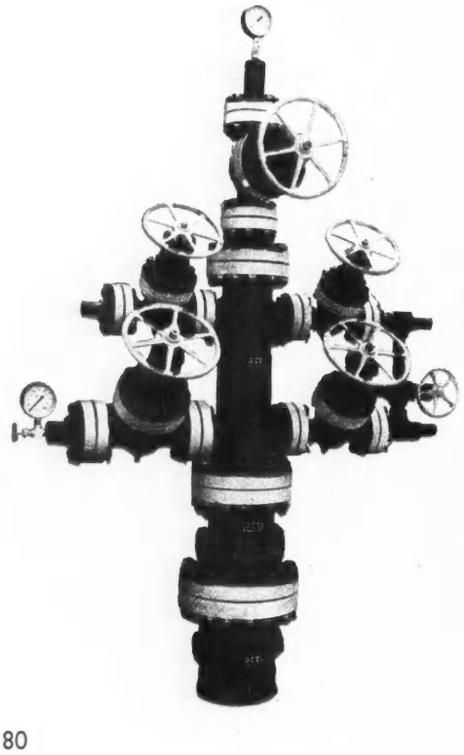
Sir John Cargill praises control of production

With the exception of Rumania, there has been increasingly better control over crude oil production in all countries of the world, Sir John Cargill, chairman of the board, told stockholders of Burmah Oil Company in a meeting in London recently.

Sir John stated, moreover, that conditions in 1935 witnessed a remarkable improvement, particularly in the marketing branch. He inferred the future was brighter for the oil industry.

For the fiscal year ending December 31, 1935, Burmah Oil Company showed a profit of 2,276,913 pounds after deducting income taxes, depreciation, and other charges, but before accounting for general reserves. This may be compared with a corresponding type of profit amounting to 1,657,218 in 1934.

This modern plant, with 16,000 square feet of floor space, was built to meet the ever growing demand for O-C-T Streamline Christmas-trees and other Well Control Equipment.



The new home of O-C-T products stands as a testimonial to the success of equipment we have designed to better fill your needs in the oil country. To us it symbolizes the happy cycle of "Better equipment enables you to operate more safely and economically, and your better patronage in turn enables us to provide this better means of serving you."

We invite you to visit this new plant and to see for yourself the care taken in producing O-C-T products.

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Selling through Supply Stores

STOCKS DECLINE
305,000-barrel decrease is noted in one week

WASHINGTON, D. C.

STOCKS of domestic and foreign crude petroleum at the close of the week ending May 30 totaled 314,020,000 barrels, according to data compiled by the Bureau of Mines for Harold L. Ickes, secretary of the interior. Compared with the figures of the previous week, this total represents a decrease of 305,000 barrels, comprising decreases of 104,000 and 201,000 barrels in stocks of domestic and foreign crude respectively.

Current reports of the industry for the week ending May 30 indicate declines in both production and runs to stills, the report states. The daily average crude oil production was about 3,015,000 barrels, or 45,000 barrels below the level of the previous week. Daily average crude runs to stills declined about 30,000 barrels, or from an average of 2,945,000 barrels. Daily average imports of crude oil rose to 138,000 barrels, the highest level reached in several months.

250 TEXAS STARTS

Austin.—The Railroad Commission approved last week permits for the drilling of 250 new wells in Texas, 144 less than were allowed the week before. Most of the decline was caused by delays in approval of applications pending for wells to be drilled in East Texas and other fields as exceptions to the spacing rules.

East Texas reported only eight new locations. There were four in Rusk County, three in Smith County, and one in Upshur County.

East Central Texas showed a marked increase with 72 permits, which included 48 in Titus County and nine in Cass County.

The Gulf Coast reported 43 new locations, with 11 in Nueces County. Southwest Texas listed only 18 permits of which 12 were for wells in Duval County.

North Texas reported 49 permits with 16 locations in Young and 10 in Wichita County. West Central Texas listed 16 permits.

West Texas reported 39 permits with 10 in Ector County and 10 in Pecos County. The Panhandle listed only five new locations.

NEW MEXICO RUNS

Hobbs, N. M.—Crude runs by pipe lines serving the various fields in Lea, Eddy and San Juan Counties, New Mexico, aggregated 2,303,441 barrels during May, or an average of 74,304 barrels daily, according to compilation by C. G. Staley, umpire. Production and pipe line runs reached the highest level in the state's history during May, but were held below the maximum quota of 75,000 barrels daily authorized by the Oil Conservation Commission for the month.

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PURCHASED ELECTRIC POWER

PETROLEUM ELECTRIC POWER CLUB

New Fields

AND EXTENSIONS FEATURE OF SEVERAL CENTRAL COUNTIES

WEEKLY STAFF REPORT

Tulsa.—Interest increased throughout central Oklahoma during the week past with two important extensions of proven areas, a midway completion in the closely gathered Olympic, Gilcrease, Furhman and Papoose pools that may prove a productive connection at the 1700-foot level, and a well-saturated core taken from a wildcat in northeast Pottawatomie County that denotes a new pool in this sector. Payne County is again in the limelight with the possibility of two new pools being developed near Cushing. One test is showing for gas and the other for oil.

Amerada Petroleum Corporation, Standard Oil & Gas Company, Gulf Oil Corporation and others', Wyant 1, NW SW SE 3-10-5e, a community test, is running tubing to wash in what looks like a new pool discovery well. There is no other production in the immediate vicinity. At a depth of 4705 feet a two-foot core showed dolomite, dry. The top of the Wilcox member of the Simpson was cored from 4709 to 4712 feet but from 4712 to 4716 feet the cores were well saturated and bleeding. The well is bottomed at 4716 feet in the Wilcox sand. This is a wildcat in Pottawatomie County.

Fitts pool, Pontotoc County, has been given a southern extension by the completion of E. H. Moore, Inc., and J. J. Deaner's Moody 1, NWc 26-2-7e, as a producer from two sands at 4223 feet and 4314 feet. This well topped the Bromide at 4185 feet and tested for 25 barrels an hour from 4035 feet in the same formation. Another test at 4315 feet resulted in a 12-barrel an hour recovery. This well is not completed and may be deepened. Fitts pool was proven for two additional southeast locations by this production which is a south offset to Blackstock and Deaner's Moody 1, SWc 23-2n-7e.

In the same county Continental Oil Company extended the Jesse pool one location to the northwest. The company's Monroe 1, NW SW NW 12-1n-7e, outside the proven area, flowed 505 barrels from the Wilcox sand at 4741 feet.

The well was deepened after the first test to 4747 feet and flowed 1504 barrels through drill pipe for five hours, and made an estimated 6,000,000 cubic feet of gas. The same company's McCarty 2, NE SE NW 12-1n-7e, in the proven zone came in for a show of oil but went to gas after three hours of testing and will be deepened from 4620 feet.

In the old producing area of Hughes County, where several small pools are producing, Hormann Company and G. B. Suppes test, NEc NW 9-9n-9e, is estimated at 100 barrels per day from 1693 feet and may link the production at that depth. This well is south of the Papoose and north of the Furhman pools. The test is bottomed at 1709 feet, 16 feet of penetration. There was not a sufficient volume of gas to flow the well, but on a swabbing test, it made five barrels per hour, and was shot with 30 quarts. Hole is bottomed in the Sonora sand. Operators have under lease 320 acres and expect to start other wells to this depth.

R. L. Kemp and Continental Oil Company's Lobaus 1, NW SW NW 21-17-5e, Payne County, a wildcat test southwest of Cushing, was drilling late in the week in the Simpson sand and was showing for oil at 4009 feet. At 4011 feet, the well drilled into rich gas in what is believed to be the top of the Wilcox. The gas volume lifted the tools from the bottom of the hole to develop a fishing job. Operators are moving boilers back from the location before attempting to clean the fish. The well is located on a block of nearly 1000 acres.

Kewanee Oil & Gas Company's Hale lease well in Burbank pool 27-26-6e, is standing with 1200 feet of oil in the hole, bottom being at 2925 feet. The well is being cleaned preparatory to shooting, and will make the fifth well on this lease. There are five other wells drilling at this time in the area.

An early completion is expected of Amerada Petroleum Corporation, Stanolind Oil and Gas Company, H. F. Wilcox Oil and Gas Company and Gulf Oil Corporation's Friedman 2, SW SE SE 28-19-3e, Payne County, where the Wilcox was topped at 4297 feet. The well made 509 barrels over a 13 hour test period, and operators expect a 1000 barrel well after being given a lighht shot.

In the same county, Amerada Petroleum Corporation, Stanolind Oil & Gas Company and other's Pratt 1, SE SE SE 29-19-5e, is an interesting test. The Misener sand was cored from 3657 to 3669 feet, and another core from 3669 to 3675 feet, which included four feet of the Viola lime, showed oil stains. There was a fair volume of gas. The well is drilling ahead to the Wilcox. If nothing is obtained at the lower levels, this well will probably be plugged back to the Viola lime.

OKLAHOMA HEARING

Oklahoma City.—A hearing has been called for June 24, 1936, at 9 o'clock a.m., before the Corporation Commission of the state of Oklahoma, under petition filed by Wm. J. Armstrong, conservation officer, to consider potentials of class "B" and "C" pools of the state. The time, manner, and method of potential determinations will be considered for class "B" pools, and for class "C" pools, the taking of regular bottom-hole pressures on key wells and the relationship of tubing and recovery through restricted production will also be discussed.

LEASE SALE

Muskogee.—An oil and gas lease and fee land sale of tracts allotted to the Five Civilized Tribes of Oklahoma, will be held at the office of the superintendent, A. M. Landman, Muskogee, June 24, 1936. Tracts in 20 counties of the state will be offered at public auction, leases going to the highest bidder.

This sale will be conducted under the regulations as prescribed by the Secretary of the Interior, December 7, 1926, successful bidders being allowed until 3:00 p.m. of the date of the sale in which to deposit 20 percent of the bonus bid. All deposits must be made to the order of D. Buddrus, cashier, and must be certified checks or bank drafts.

OUTPUT DROPS

Love County discovery is believed to be obstructed

Ardmore.—Interest in southern Oklahoma during the past week continued to embrace Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Westheimer 1, SW SE SW 27-6s-2e, the first production in Love County. Apparently completing for 88 barrels per hour from the Viola lime at 2790 feet after being acidized, and for a total of 5,000,000 cubic feet of gas, the production swiftly declined and the last test for a 24-hour period resulted in a recovery of only 142 barrels.

It is believed that an obstruction exists in the 2½-inch tubing, as difficulty was experienced in lowering pressure equipment into the hole. The operators believe the obstruction to be not more than 40 feet from the surface and will pull tubing to clean and examine. It may be that the low present recovery is a result of this condition and that the well is equal to the prior tests. Gas volume fell off in relationship to the oil.

Sinclair Prairie Oil & Gas Company's Stockton 1, SE SW 26-6s-2w, a deep test farther west in the county, which has been fishing at 8785 feet for 470 feet of drill pipe is cementing off the pipe and will drill by. The depth of this well makes it of more than ordinary interest as it will define possible productive members of the lower strata.

A completion in Carter County, Simpson and Fell's Merrick 1, SW SE NW 9-2s-2w, for 180 barrels after being swabbed in, and which tested 703 barrels through 2-inch tubing for 10 hours, is an important completion between the Wildcat Jim and Ed Cox areas. The well is a half mile south and a quarter mile north of nearest production on the unproven area between the two fields and proves the separating zone. Hole is bottomed at 1530 feet in sand. Operators are skidding their rig to drill a west offset.

In the old Fox pool, Carter County, where Carter Oil Company's Williams 1 came in last October for 3000 barrels at SW NE SW 27-2s-3w, from a depth of 8105 feet, another test is near the 5000-foot mark. This is Gulf Oil Corporation's Johnson 1, one mile west of the Carter's discovery.

In the new Cement area, where Mara-

thon Oil Company and Ramsey Petroleum Corporation's Marchand 4, SW SE SW 2-5n-9w, at the north edge of the pool, Caddo County, tested for 50 barrels hourly of 38.5 gravity (corrected) oil with 62,000,000 cubic feet of gas, John B. Nichols is preparing to spud. This well is scheduled to go to the new deep pay.

Jackson County is to have a test south and east of the Tipton production. Gulf Oil Corporation has staked a location in SW SE NE 6-1s-19w, for Ellis 1, in the Boucher section.

NEW WILDCATS

Coal County will receive additional testing

Tulsa.—Wildcat interest in Oklahoma is centered in the southeastern area where three important starts have been made in Coal County. Northeast Seminole County has one new wildcat and northwest Johnson County one. With the exception of the test in Seminole County, each well may be to deep horizons, being headed for the Simpson formation, with either the McLish or the Wilcox member as the primary goal.

This area has been under close observation for some time, but due to erratic surface geology, with numerous faults, folds and unconformities, has not been adequately tested. The Jesse pool in Pontotoc County proved productive in the Wilcox member of the Simpson when Continental Oil Company's McCarty 1, C SW NW 12-1n-7e, came in at 4620 feet for 4000 barrels per day early in November of 1935. This was the first of the big wells of the pool, and is nine miles west and slightly north of the present tests, which are considered to be on the same general trend running from the Fitts field through Jesse.

Sinclair Prairie Oil & Gas Company's Culver 1, NE NE SW 35-1s-8e, is a rig, four miles southwest of Tupelo. Location was made from both seismographic and surface geology. In the second section to the southeast, Continental Oil Company is rigging up King 1, NE SW NE 26-1n-8e, a location by the same means. Eight miles directly south of this test, Carter Oil Company and Magnolia Petroleum Company's James 1, SW NW SW 35-1s-8e, is rigging up and is a surface survey location. This well is headed for the 3500-foot level.

Although these locations are significant, they are not the first tests in the vicinity. In December of 1928 a test, in Section 35-1n-8e, went to 4793 feet and was plugged back to a sand at 1850 feet where it made 11 barrels per day. Further east another shallower well proved a failure with a slight show of oil at the 1850-foot level.

Logs of drilled wells in this area have proved that the subsurface geology does not always conform with surface indications. The general trend of the area's lift is to the south, the Simpson zone continually rising, so that the Carter and Magnolia test in Section 35-1s-8e may reach the top of the zone at 2800 feet or probably higher. The same horizon in the Jesse Pool is about at 4700 feet and in the Fitts area at about 4500 feet.

In addition to these locations, Shell Petroleum Corporation's Illinois Bankers Life 1, NW SE NE 10-2s-7e, is moving in machinery. This is a surface geological location in northeast Johnson County, immediately southwest of Coal County.

81 Active Tests

OKLAHOMA CITY CAMPAIGN EXPECTED TO SLACKEN SOON

Oklahoma City.—Another month should bring the drilling campaign of the north extension of the Oklahoma City field near its close. Of the 81 active wells at the end of the last week, 14 were ready to be drilled in while 39 were below the 5500-foot level. These active wells are within what is considered the productive limits of the area. Salt water intrusion in edge wells on the north and west sides of the field resulted in drilling being halted in a few instances and the abandonment of some locations.

In all, the area has had 143 locations staked. Completed wells on which potentials have been taken number 48. This difference of 14 between completed wells and total locations and the total of active wells is accounted for in current completions and in abandonments because of the salt water situation.

Combined potentials of the 48 wells is 625,329 barrels, a well average of 13,027. This calculation includes three wells whose potentials were below 1000 barrels each. Should the potentials average be maintained for the remaining 81 wells, final potentials for the north extention will be 1,055,177 barrels.

Declining pressure, however, indicates that potential ratings will not keep pace with the figures of the earlier wells. Due to gas drainage when the South Oklahoma City field was under development the north extension came in as a low pressure field. In only a few instances was bottom hole pressure in excess of 600 pounds. Wells that had pressure of 575 pounds are now down to around 375 pounds.

Already preparation is being made for producing wells by gas lift. The Barnsdall Oil Corporation is building a gas lift plant of 500,000 cubic feet capacity on its Wheeler lease. Engineers, however, hope to be able to keep wells flowing until the pressure reaches 200 pounds.

First place as a producer in the north extension, based on potentials, is held by British American Oil Producing Company. Its six wells on the Piersol and Warr leases have potential rating of 131,612 barrels. In addition it has a half interest with Midway Oil Company in 17 wells with potential rating of 276,633 barrels. Barnsdall Oil Corporation holds second place, as owns the interest of the Midway Oil Company in the 276,633 barrels of potential rating of the 17 wells and another 10 wells in which it holds majority interest have potential rating of 129,220 barrels. Phillips Petroleum Company and its partners have 10 wells with potential rating of 136,032 barrels. The remaining wells on which potentials have been taken are owned by Anderson-Pritchard Oil Corporation, Empire Oil & Refining Company and Superior Oil Corporation.

Another concern whose wells will gain potential listing next week is Sunray Oil Company. Its No. 1 State, east of the capitol building, began flowing from 800 to 1000 barrels an hour while drilling under pressure late last week. This concern is developing the lands around the capitol building and the home of the Oklahoma governor. It has eight drilling wells and all are within the area that is classed as productive.

Recent completions in the north extension are: British American Oil Producing Company, Elliott 1, 30th Street and Kelly Avenue, 14,796 barrels potential, total depth 6445 feet; Barnsdall Oil Corporation's Dawson 1, Northeast 33rd Street and Phillips Avenue, 17,392 barrels potential, total depth 6439 feet; Phillips Petroleum Company's Liberty 1, 25th Street and Laird Avenue, 15,540 barrels potential, 6515 feet; Phillips Petroleum Company's Murray 1, 33rd Street and Phillips Avenue, 10,698 barrels, 6528 feet; Phillips Petroleum Company and Black Gold Refining Company's Sawyer 2-A, 30th Street and Laird Avenue, flowed 1900 barrels the first hour of its test, total depth 6490 feet.

Since adoption of the practice of drilling no deeper than 5275 feet below sea level, no further water trouble has been encountered. Six wells have been troubled with water. Efforts are being made to plug these wells back to restore production. These wells are due to be put on gas lift in case plugging back is successful in shutting off water but fails to leave sufficient gas pressure for flowing.

New Moore Tests

Two new locations were staked last week in the Moore pool, Cleveland County. These were No. 1 Fant, NW NE NW 27-10-2w, and No. 1 Strauss, SWc 22-10-2w. This community development is being drilled by Sinclair Prairie Oil & Gas Company and the lease ownership is held by Mid-Continent Petroleum Corporation, Wiraaine Petroleum Company, F. M. Porther, Carter Oil Company, Empire Gas & Fuel Company, Standard Oil Company of Kansas, Continental Oil Company, Phillips Petroleum Company and Twin State Oil Company.

Franklin 1, SE NW SE 21-10n-2w, the first oil well in this community block of 1360 acres, was tested June 5 and flowed more than 1000 barrels an hour for three hours. The well is now shut down for tankage. Top of the Wilcox sand was found at 7268 feet.

In the Britton pool, Sinclair Prairie Oil & Gas Company et al's Dills 1, NE NE NW 17-13n-3w, failed to flow after being acidized in the Simpson at 6615 feet. It is being drilled deeper.

Gulf Oil Corporation et al has staked a location, Lindsey 2, NE SW NW 6-13n-3w, a south offset to a small producer Lindsey 1.

Sinclair Prairie Oil Company et al's Susie Dills 1, NE NE NW 17-13-3w, was completed for 43 barrels per hour from the first Wilcox sand as the best well in the north end of the Britton pool, Oklahoma County. Top of the sand was found at 6630 feet, total depth 6670 feet. Gas production was 7,000,000 cubic feet. This well ran high structurally.

Important Finds

RICE, ELLIS AND McPHERSON COUNTIES IN LIMELIGHT

WEEKLY STAFF REPORT

Wichita.—Kansas interest centered in Rice County during the week past, where one new field was opened and another wildcat developed 36,000,000 cubic feet of gas in the Arbuckle lime.

McIntyre and Rose Spring Drilling Company's Young 1, SW SE 8-20-9w, southwest of Lyons in Rice County, proved for a discovery well midway between the Kessling and the Chase pools. Location is directly between the two producing areas. On a potential test late in the week the well pumped 435 barrels from the Arbuckle lime after being acidized. Test was for 18 hours. The well is bottomed at 3278 feet.

Shell Petroleum Corporation's Maughlin 1, NE NW SE 11-20-8w, a Rice County wildcat, found 36,000,000 cubic feet of gas in the Arbuckle lime topped at 3235 feet, the gas coming from the 3240-foot level. This volume is unusual for this horizon. The company succeeded in killing the gas Friday morning and is coring ahead.

Empire Oil & Refining Company's Cunningham 1, SEc 26-18-1w, seven miles north of the Ritz-Canton production, which showed a dissapointing volume of water when first tested after showing for oil at 2830 feet in the Mississippi lime, was cemented and retested. Last tests indicate a new pool. The well made 17 barrels per hour over a five-hour period. The location is in northeast McPherson County.

Deep Rock Oil Corporation's Hadley 1, SW NW 20-11-17w, an old well in the Hadley pool of Ellis County, is to be deepened to the Arbuckle. If this well produces from this latter depth, it will prove a connection between the Hadley and the Bemis pools. The well was completed in 1929 as the discovery well of the Hadley pool and is located three-fourths of a mile west of the Siliceous lime production of Bemis.

Big Wherry Well

Shaffer et al's Hauschild 1, NW NW NE 15-21-7w, which showed for a gusher last week, was given one of the highest of state potentials on test late in the week. State potential was given as 10,049 barrels. This well is located on the Wherry trend to the south of the present producing zone. Other operations are expected to be announced for other wells in this immediate vicinity.

Northeast of Lyons, Rice County, Atlantic Oil Producing Company's test, CSL N½ NE 35-19-8w, found 3,200,000 cubic feet of gas in the Viola lime and is cementing casing to test. Penetration into the lime was only two feet. Hole is bottomed at 3243 feet. The location is but a few miles from Shell Petroleum Corporation's gas well.

In Ellis County, Jones Brothers Drilling Company's Solomon 1, SE SE SW 28-11-19w, topped the Siliceous lime at 3629 feet and penetrated to 3632 feet. During a 12-hour interval oil rose 1450 feet in the hole. Operators believe that cavings have partially stopped the flow into the five-inch casing.

Twin Drilling Company's Goetz 2, NE SE 3-14-17w, a northeast offset to the discovery well of the Victoria pool, southeast of Hays in Ellis County, bailed at the rate of 100 barrels per day from the Arbuckle, with hole bottomed at 3560 feet. This well proves the Arbuckle in this pool and gives it two producing formations. Other wells are in the Oswald lime at about 3300 feet.

The same company's wildcat, Copeland 1, NEc SW 26-14-19w, northwest of the Ruder pool and southwest of Hays may open new conglomerate production in the county. The pay was topped at 3695 feet and cored to 3710 feet, and showed saturation. The well is shut down to standardize and will drill in.

George P. Dickey and Dickey Oil & Refining Company's Sheppard 1, NEc NW 22-26-9w, Reno County, which made water and a small quantity of oil in the Viola lime at 4157 feet is being drilled deeper to test the Wilcox and the Siliceous lime.

Skelly Oil Company's Ehrlich 1, SW NE 25-14-15w, Russell County's Harbaugh pool, completed for 1116 barrels of oil from the Arbuckle. Hole is bottomed at 3157 feet.

During the past week there were a total of 33 completions in Kansas. Twenty-two wells were completed as oil producers for a total initial production of 15,874 barrels. One gas well was completed for 750,000 cubic feet, nine wells were finished as dry and there was one abandoned location.

Scouts of the state make a total of 30 first reports, Russell County being first with 9 starts, leading other areas by a considerable margin. Butler, Greenwood and Woodson Counties each made three first reports, Ellis, Ellsworth, MchPerson, Reno and Rice Counties two each, and Sedgwick and Barton one each.

GAS TAX EVADED

10 states make arrests for failure to pay

Prosecution, or legislative investigation, of cases of gasoline tax evasion currently are being carried on in 10 states in an effort to curb revenue losses running into millions of dollars, the American Petroleum Industries Committee reports. Arrests have been made in all 10 states.

Gasoline tax revenue losses have been estimated as high as $2,000,000 per year per state in Mississippi and Tennessee, where tax rates of six cents and seven cents per gallon respectively have made evasion particularly profitable. In other states tax evasion has been made possible by exemption and refund provisions in tax laws. It is estimated that in Kansas alone one gallon of gasoline avoids taxation for every two gallons on which taxes are paid.

Wichita.—Hartman-Blair Oil Corporation, active in Kansas development, has acquired the south half of the sixth floor of the Bitting Building for offices.

KANSAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARTON COUNTY—		
National Ref., McLean 1, sw sw se 25-17s-11w	1836	3272
Stanolind, Eberhardt 1, sw sw sw 13-19s-11w	846	3356
BUTLER COUNTY—		
United O & G, Anderson 2-A, nw ne se se 9-27s-4e	16	1951
Polhamus et al, Simisch 4, sw ne ne 5-28s-7e	lcn	abd.
COWLEY COUNTY—		
Roth & Faurot, Guthrie 1, se ne nw 30-33s-8e (pb 2300)	¶¾	3146
ELLIS COUNTY—		
Brunson & Ewers-Simpson, Gross 1, ne ne sw 29-14s-17w	*	3558
Yarnell & Carlson, Phillip 1, nw nw se 2-14s-18w	*	3665
GREENWOOD COUNTY—		
McGinnis et al, Ellis 1, ne nw sw 34-22s-11e	50	1933
Jackson 1, ne sw nw 25-25s-8e	40	2334
McPHERSON COUNTY—		
Marathon, Decker 1, sw se se 20-21s-1w	1970	3299
Shell et al, Neufeldt 2, se se nw 21-21s-3w (otd 3427)	60	3499
RENO COUNTY—		
Olson & Shell, Johnson 4, cne nw 24-23s-4w	203	3375
McPherson Drlg et al, Scheirchzer 3, se se sw 17-24s-4w	808	3390
The Texas Co.'s Collins 6, cs½ s½ nw 16-24s-4w	571	3384
RICE COUNTY—		
Dickey & Continental, Newkirk 1, ne ne sw 11-18s-7w	*	3353
Gratton et al, White 1, sw sw nw 17-18s-7w	*	3363
Continental et al, Jones 1, ne nw ne 36-18s-8w	1749	3165
Stanolind, Mitchell 5, ne nw sw 32-19s-10w	639	3320
Gulf Oil, Keesling 4, ne sw sw 10-20s-9w	274	3254
Sinclair Prairie, Graham 4, ne sw se 16-20s-10w	*	3371
Darby Oil, Johnson 1, se se sw 10-21s-7w	2160	3367
RUSSELL COUNTY—		
Empire O & R, Miller "C" 1, sw se se 31-14s-13w	*	3147
Central Pet., Foster "B" 1, sw sw ne 3-14s-15w (otd 3132)	498	3315
Darby Pet., Dumler 2, ne nw nw 11-14s-15w	802	3290
Skelly, Eholich 1, sw sw ne 25-14s-15w	1116	3157
Southern Oil, Berrick 2, sw ne ne 6-15s-13w	*	3250
Coralena Oil, Boomhower 1, nw nw nw 32-15s-13w	1804	3286
SEDGWICK COUNTY—		
Dickey Oil, Ayers 1, sw sw nw 12-27s-2e	*	3230
SUMNER COUNTY—		
Wilcox et al, Hess 1, se se nw 13-34s-2w	*	4605
WOODSON COUNTY—		
Alexander & Bell, Williams 1, sw sw sw 23-23s-14e	12	1646
Harper Oil, Figgee 7, cn½ n½ s½ Sec. 28-23s-14e	60	1669
Woodson County Pipe Line, Winterschield 7, cwl se 6-24s-14e	80	1717
Sheedy et al, Klick 6, ne sw se 20-25s-14e (pb 1448)	280	1454

*Failures; †Junked; ¶Million cu. ft. gas.

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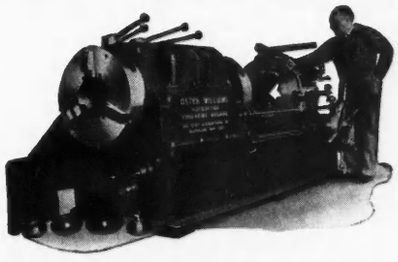

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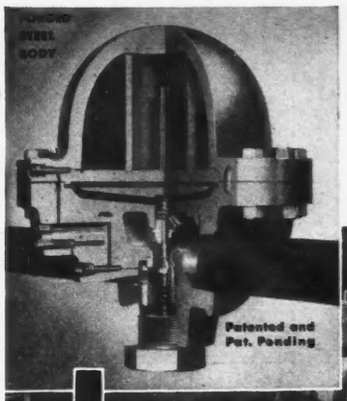

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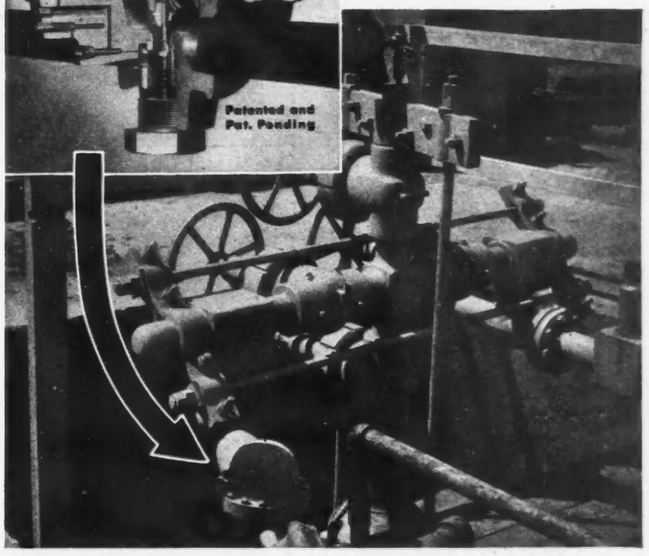

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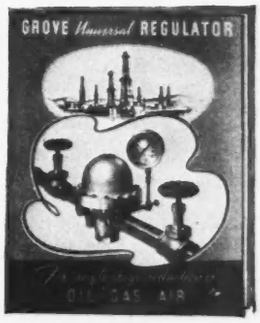

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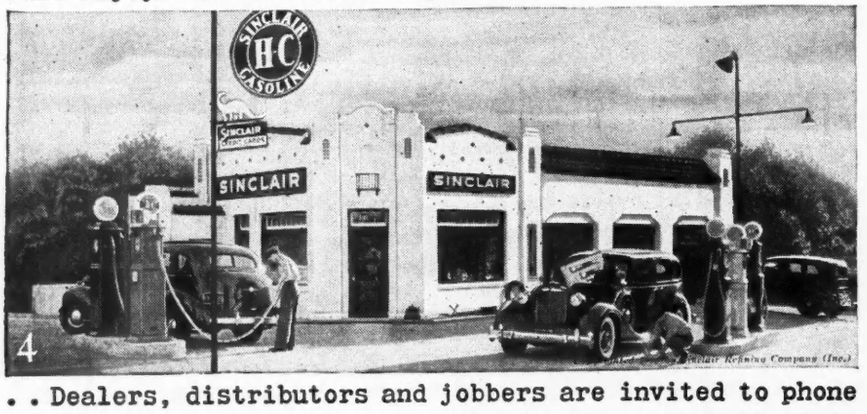

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15 RIGS AT TALCO

Independents leading in pushing development

WEEKLY STAFF REPORT

Talco, Texas.—Fifteen rotary rigs are in operation at Talco, the first faulted structure in Northeast Texas to yield oil production in commercial quantities from the upper section of the Trinity series, and eight wells have been completed in the 4200-foot Paluxy sand zone. Independents are taking the initiative in pushing development, which will likely assume major proportions within a few months. New exploratory tests launched the past week included several southwest outposts situated from one to two miles in advance of production in Franklin County.

Although majors hold leases on the majority of the acreage situated on the south flank of the faulted area, they are holding back on drilling, except forced offsets, until the railroad commission sets a hearing date for the adoption of permanent program of proration and well spacing rules. Failure of the majors to keep abreast of the minority group of lease owners in drilling will result in the former being able to hold in abeyance the extension of trunk lines into the area.

135-Barrel Allowable

Under a temporary order, Talco wells are prorated to 135 barrels daily. A portion of the field's output is being sold as fuel for drilling rigs at 85 cents per barrel delivered, while the remainder is shipped to the coast in tank cars by Humble Oil & Refining Company and Independent Crude Oil Trading Company. Both have a posted price of 60 cents per barrel at the well, but the latter is the only general buyer of crude in the field.

Reduction of the freight rate on Talco crude moving in tank cars to Houston and other nearby refining centers from 37.38 cents to 30.38 cents per barrel effective June 5, may broaden the market outlet for the 24-25 gravity product. The oil is of a mixed base, with about 2.6 percent sulphur, and can not be processed profitably by skimming plants as the gasoline yield is reportedly less than 15 percent. Evidently the refined oil yield from Talco crude after being cracked is more attractive than that indicated by routine laboratory analysis as the Eastern States Petroleum Company has contracted to take up to 1500 barrels daily from the Independent Crude Oil Trading Company at a cost of about $1 per barrel delivered into its Houston plant.

Short Flowing Life

Talco will not have a long flowing life from the Paluxy zone. Three latest tests in the Titus County portion of the structure to drill into the thick section of saturated sand and sandy-lime were somewhat disappointing in capacity to flow, and two have rigged up pumping equipment. Magnolia Petroleum Company's Carr 1, west offset to the discovery well, changed from rotary at 4151 feet to cable tools to drill Paluxy pay zone at 4189-4248 feet. On completion gauge it pumped and flowed

590 barrels pipe line oil in 22 hours, but is capable of flowing its proration allowable. This well cut through the fault plane at 3979 feet, and recorded a normal section of Paluxy, with the hole bottomed at 3877 feet sub-sea. Haynes B. Ownby Drilling Company's Easterling-Jones 1, C lot 6, block 16, near center of east line of the townsite, proved to be situated near the north limits for production, having cut through the fault to the upthrow side between 4042-4070 feet. First saturation in the Paluxy was found at 4264 feet, or 3903 feet below sea level. The pay zone was cored to 4342 feet, or 3981 feet sub sea. The well kicked off after running the swab 11 times, and flowed by heads at the rate of 200 barrels daily on preliminary gauge. R. B. Sanders and Murchison Brothers (Nemo Oil Company's) Talco School 1, situated in SEc of a five-acre lease, near southeast corner of the townsite, was installing pumping equipment late last week, having flowed 5½ barrels hourly from Paluxy at 4185-4340 feet. The hole is bottomed at 3968 feet sub-sea. Several delays were encountered in drilling in and also in removing the drilling fluid. It is believed that a more prolific well would have resulted if the porous pay zone had not been exposed to the rotary mud beyond a reasonable period.

In view of the almost complete absence of free gas and abnormally low working pressure for 4200-foot producers, the most satisfactory method of completing wells is to penetrate the pay to the desired depth with a large diameter hole, then swing casing into position and cement. Plugs then can be drilled with oil for circulation. Humble Oil & Refining Company and Lucey Petroleum Company et al, owners of the largest producers, used this method in order to protect the pay from undue exposure to the rotary mud. Cable tools give the same results, but the natural tendency of the Paluxy to cave makes this method slow.

Lucey Petroleum Company et al's second well on the W. N. Crawford 25.23-acre lease, O. James Survey, eastern Franklin County, was preparing to drill plugs and complete late last week after logging broken pay at 4158-4300 feet. Seven-inch pipe was cemented at 4150 feet. This well was ready to complete within 20 days after spudding. Work will proceed at once on a third test for the lease to be drilled on the east line.

Important southwest extensions for the producing area rest upon the outcome of Joe DeGrazier, Dallas, et al's F. M. Batts, 1, NEc of a 30-acre lease, F. M. Batts Survey, which was scheduled to start up late last week. Earl Bateman Drilling Company's Eula Phillips 1, NWc of north 38½-acres of a 77-acre tract, Wm. Bridwell Survey, an intermediate location, recorded first Pecan chalk at 1342 feet, and was drilling below 1500 feet. J. Z. Werby and Bond's T. J. Sanders 2, NEc of an 82-acre tract, Wm. F. Dyer Survey, was rigging up. These three Franklin County tests are removed some distance south of the fault plane, and will encounter about 700 feet of Georgetown lime section above the Paluxy.

Pleasant Oil, Inc.'s C. M. Carr 1, the discovery well, has cemented packer at top of liner to try and shut off water that appeared when the well was deepened from 4208 feet to 4260 feet, or 3890 feet sub-sea. The well was converted from a pumper to a flowing producer by deepening, but the operation loosened the casing seat, permitting salt water from the Woodbine to break through. Tide Water Oil Company's Carr 1, situated on the east side of the discovery well site, entered the Paluxy at 4163 feet, or 3805 feet sub-sea, and was coring below 4200 feet. Jule Alford, trustee, et al's J. F. Fry 2, situated in most easterly NEc of the Isaac P. Stern Survey and about 1½ miles south of the discovery well, was drilling below 1000 feet. A previous test on the tract was junked above the Paluxy zone at 4220 feet.

68 COMPLETIONS
In East Texas includes 63 new producers

Tyler, Texas.—The East Texas field accounted for 68 completions the past week, including five failures drilled on the edge of the structure. There were 52 producers and four dry holes listed as completions the previous week.

Thirteen of the producers listed on the current completion report failed to flow, and initial gauges were determined by swabbing or pumping.

Three of the dry holes were on the northwest flank of the structure in Upshur County. J. K. Wadley et al's S. M. Alford 1, near SWc of a 100-acre lease, Wm. King Survey, and a short distance north of a small producer, showed for a five-barrel pumper in sand at 3765-73 feet, with an elevation of 434 feet. It was drilled to 3811 feet and abandoned after failing to shut off water in plugging back. Pete H. Pewitt et al's T. J. Kirk 1, NEc of a 24-acre lease, Peter Whetstone Survey, south offset to a pumper, was abandoned at 3745 feet, with an elevation of 367 feet. Beal Sneed Oil Company's DeLoach-Bond 1, near NEc of a 750-acre lease, Perry Reese Survey, Cherokee County, encountered small show of oil with water in sand at 3671-3681 feet, but was abandoned at the latter depth.

RUSK COUNTY TEST
Looks for oil in lower Trinity sand series

Tyler, Texas.—Pure Oil Company's W. H. Faulkner 1, deep test for the Mount Enterprise prospect in southeastern Rusk County, was drilling below 6511 feet late last week, logging shale and lime, and will proceed to the lower Trinity sand series. This wildcat recently stirred up considerable interest when coring was halted at 6297 feet in porous limestone to test on the strength of slight saturation. Formation tester was used unsuccessfully several times at the above depth, but when the hole was deepened one foot the tester showed salt water. Top of anhydrite was recorded at 5707 feet, with an elevation of 563 feet, and first massive anhydrite at 5945 feet.

J. S. Abercrombie Company and Harrison Oil Company's Southern Pine Lumber Company 1-T, near the center of a 393-acre tract, D. D. Bruton Survey, prepared to deepen from 2118 feet after testing salt water in the Glen Rose section of the Trinity. Sand formation with favorable oil saturation at 2111 feet previously showed brackish water. More saturated sand was logged in deepening to 2118 feet, except for a break of blue shale at 2115½ feet. Georgetown lime was logged at 665-1020 feet, with an elevation of 407 feet, and first Paluxy at 1057 feet.

In Bowie County, Westmount Oil Company et al's R. N. Phillips 1, J. N. Hancock Survey, centering upon a 12,000-acre block in the northwest portion of the county, was drilling below 3020 feet. Base of anhydrite, a popular geological marker for the area, was called at 2890 feet, or 2550 feet below sea level. It is checking about 100 feet higher on structure than Joe M. Burnham and Pat Marr's F. O. Weiss 1, situated about 1¼ miles to the southeast. The latter was abandoned in 1932 at 3950 feet after logging several favorable oil showings below 3300 feet.

Tide Water Oil Company and Seaboard Oil Corporation's J. N. Edens 15, second Trinity sand test for the Cayuga field, Anderson County, was drilling below 2500 feet, having logged Pecan chalk at 2245-2410 feet, with an elevation of 313 feet.

EAST TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Arcadia Ref. Co., J. B. Wilson 6 (20-ac)	7600	3734
Davenport et al, W. W. Wilson 2	*	3668
Gilcrease Oil Co., Bradford 9 (40-ac)	1200	3670
Harry Hanbury et al, J. H. Sharp-Marathon 3 (104-ac)	3600	3718
Gordon McMillan et al, M. A. Thrash 5 (13.4-ac)	8000	3775
Marathon, M. G. DeGuerin 18 (160.7-ac)	5500	3673
Jim McMurray et al, D. Dickerson 2	168	3598
Royal Pet. Corp., J. W. McDavid 3-B (40-ac)	120	3585
I. W. Wooley 2-B (5-ac)	120	3576
Sinclair Prairie, Mayfield 62-A, (374.74-ac)	2600	3757
H. J. Patterson 9 (162.67-ac)	1000	3724
J. B. Sneed & Co., DeLoach-Bond 1 (750-ac)	*	3681
Stanolind-Pure Oil Co., J. W. Ashby 2 (107.6-ac)	1000	3688
Sun Oil Co., M. M. Burns 8 (109.98-ac)	750	3754
J. P. Seale 3 (143-ac)	2500	3720
Tide Water, Glen Pool 5 (34-ac)	5500	3726
Texas Gulf Pet. Co., Hodnett-Melton 11 (134.84-ac)	4500	3680
G. H. Vaughn Prod. Co., W. O. Alford 8 (80-ac)	2400	3762
C. L. Wolf-Octo Oil Corp., N. L. Morvill 1-A (19.77-ac)	240	3603
KILGORE AREA—		
J. G. Beard et al, Elder Bros. 8 (72.16-ac)	240	3540
Davis & Hart, G. P. Thomas 1 (60-ac)	50	3468
L. A. Demmer et al (was Saltmount), M. Kennedy 2 (20-ac)	5	3708
Harcher Oil Co.-Producers Inv. Corp., W. M. Crim 1 (37/100-ac)	750	3560
Humble, L. D. Crim 174 (914.51-ac)	9500	3709
S. S. Laird 84-B (568.53-ac)	4500	3629
S. S. Laird 86-B (568.53-ac)	3000	3620
S. S. Laird 88-B (568.53-ac)	720	3537
Kinso Oil Co., C. Wells 4 (25.4-ac)	3000	3650
T. W. Lee & Williams, Carter 4-A (64-ac)	1200	3596
Riley & Adams (was Potter Bros.), Hughey 2, blk 123	2000	3564
Rozel Oil Corp., A. L. Still 10-A (98-ac)	120	3535
Shell, J. H. Spivey 12 (102.45-ac)	7500	3731
J. H. Spivey 13 (102.45-ac)	7000	3745
Sinclair Prairie, M. Kennedy 2-C (20.2-ac)	500	3645
The Texas Co., S. B. Walker 19 (213-ac)	750	3593
Tide Water, Bivens 32 (202.7-ac)	7000	3630
Trentman Oil Corp. (was Root & Mabee), A. Wynne 2 (22.84-ac)	500	3672
L. J. Wardlaw et al, E. Camp 1 (8-ac)	250	3524
R. L. Wheelock & Collins, D. Wells 22 (120-ac)	5000	3623
LONGVIEW AREA—		
Arkansas F.O. Co., Burnside 35 (209-ac)	8400	3507
Lathrop 9-B (58.82-ac)	8000	3604
Ben G. Barnett et al, M. L. Bradshaw 1-B	*	3705

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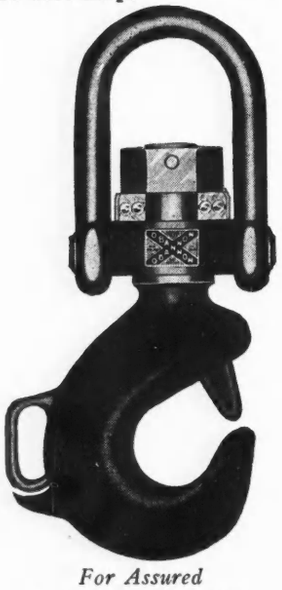

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Company, Well and Location	Init. Prod. Bbls.	Depth
Carl G. Dunham et al, Mathews 5 (16.73-ac)	1500	3581
Empire O&R Co., J. W. Akin 15 (100-ac)	9000	3565
Bert Fields et al, E. L. Walker 13 (140-ac)	1500	3694
O. C. Fisher & A. F. Dye, Willie Starr 3 (10-ac)	1200	3582
Gregg Oil Co., T&P Ry. Co. 2-E (6-ac)	7200	3555
Grisham-Hunter Corp., T&P Ry. Co. 6 (10-ac)	1500	3611
L. G. & S. Oil Co., McQueen 11 (94.54-ac)	3600	3603
Joe Long-Cushing Drl. Corp., Owens 14-A (108-ac)	7000	3576
H. B. Owenby Drl. Co., E. Cabbiness 7 (75.77-ac)	150	3604
E. Cabbiness 8 (75.77-ac)	200	3580
Pete H. Pewitt et al, T. J. Kirk 1 (24-ac)	*	3745
J. D. Reynolds et al, L. B. Miller 4 (104.8-ac)	5400	3725
Paul F. Rutledge-C. W. Boller, P. Todd 6 (155-ac)	4000	3721
Selby O&G Co.-Lewis Prod. Co., Snavely 31-B (361.2-ac)	7300	3577
Sinclair Prairie, J. W. Akin 13-A (96.6-ac)	10,000	3629
Southland Drl. Co.-United E&W Oil Co., O'Byrne 24 (304-ac)	1200	3690
O'Byrne 25 (304-ac)	1200	3716
Stanolind, Adrian-McCrary 12 (65.64-ac)	7800	3512
B. Jones 5-B (30.58-ac)	7600	3667
Pine Hill Church 1 (1-ac)	7400	3641
Stanolind-Tide Water, J. H. Boles 6 (30-ac)	8500	3579
Sun Oil Co., E. O'Byrne 16 (310-ac)	1000	3709
Tide Water, Castleberry 21 (202-ac)	3600	3620
Twin Oil Co., Mackey-Humble 7 (59.2-ac)	1000	3737
J. K. Wadley et al, S. M. Alford 1 (100-ac)	*	3811
Jim A. Woods et al, C. B. Mackey 8 (60-ac)	1500	3717
ANDERSON COUNTY—(Long Lake Field)		
Tide Water-Seaboard Oil Corp.	3000	5292
HENDERSON COUNTY—(Cayuga Field)—		
Joe A. Worsham et al, J. & J. Wathen 2 (62-ac)	3000	4097
TITUS COUNTY—(Talco Field)—		
Magnolia Pet. Co., C. M. Carr 1 (70-ac)	643	4248
VAN ZANDT COUNTY—(Van Field)—		
Humble, R. S. Blake 18 (201.4-ac)	12,000	2899
Pure Oil Co., A. D. Clark 6 (42-ac)	30	2968
WILDCATS		
NAVARRO COUNTY—		
Thomason Holding Co., Estes Bros. 2 (58.2-ac)	*	2737
RUSK COUNTY—		
DeArman et al, A. Taliaferro 1 (50-ac)	*	3590

*Failures; †Junked; ¶Million cu. ft. gas.

GRANITE WASH OIL

Wheeler County wildcat shows below sea level

Pampa, Texas.—Phillips Petroleum Company's G. W. Porter 1, C NE SW Section 35, Block A-8, H. & G. N. Ry. Survey, Wheeler County wildcat, tested several barrels of 32 gravity oil from granite wash formation at 3770-3780 feet, but developed a small amount of salt water in deepening to 3810 feet. Top of granite wash section was logged near the 3000-foot level, with an elevation of 2405 feet. The oil showing attracted considerable interest among Panhandle operators, as oil production in the district is generally found above sea level depth.

Porter 1 is located several miles northeast of oil and gas production in the Shamrock area, and is on the north flank of the granite ridge. Phillips Petroleum Company plans to deepen to the Ordovician lime horizon, the original goal set for the test.

CORES SATURATION

Gaines County wildcat may discover field

NORTH & WEST TEXAS

WEEKLY STAFF REPORT

Midland, Texas.—Recovery of saturated lime at 4707 feet when core barrel was run by Landreth Production Corporation's W. H. Kirk 1, SWc Section 22, Block A-21, PSL Survey, south central Gaines County wildcat, enhances the outlook for an oil strike in the area. About 1½ feet of oil saturation appeared in the core taken at the above level, and hard lime with some anhydrite was logged in coring to 4720 feet, or 1449 feet below sea level. This prospect is located about nine miles northwest of the Means field, nearest producing area, and is considerably higher on structure than R. H. Gill et al's E. R. Crews 1, an intermediate test that logged a show of dead oil at 4921-25 feet and sulphur water at 4979 feet, or 1782 feet sub-sea. The latter was abandoned in February, 1934, at 4993 feet.

Twelve companies purchased protection acreage or made dry hole contributions towards the drilling of Kirk 1, which centers upon a geophysical prospect. First stringer of brown lime was logged at 4021 feet, and top of white lime at 4315 feet, with an elevation of 3271 feet.

Humble Oil & Refining Company is rigging up rotary to drill J. H. Eubank 1, C SW SW Section 6, Block AX, PSL Survey, situated about eight miles northwest of Kirk 1. Recently new leases were purchased to give the company a block of about 4000 acres. Gulf Oil Corporation is also represented in the area with lease protection.

Extension of the McCamey district, Upton County, about 1½ miles to the east and immediately north of Hurdle, was accomplished the past week when Brewer & Smith, Inc., McCamey et al's Cordova Union Oil Corporation 1, SEc NW¼ Section 19, Block 1, M. K. & T. Ry. Survey, flowed by heads from lime at 2070-2072 feet. The well indicated a small producer from upper section of the dolomite at 2007-10 feet. Tubing has been run to acidize.

Wildcat activity in West Texas has not been gaining in volume in proportion to the expansion of development work in the established fields. Companies that normally can be counted upon to subscribe to lease purchases to support exploratory tests prefer to hold such tests in abeyance until a greater demand for sulphur contaminated crudes, and a lull in drilling of the older areas.

J. E. Lucas, Breckenridge, Texas, et al have moved in equipment to drill R. S. Pershing 1, located 1320 feet from northwest and 3960 feet from northeast lines of Section 1, Block 31, H. & T. C. Ry. Survey, southeastern Crane County wildcat. The acreage was farmed out by The Texas Company.

Reports indicate that The California Company and Honolulu Oil Corpora-

tion may start work shortly on a 3500-foot test for a small block assembled in Glasscock County. Location has been tentatively assigned to the SW¼ Section 25, T. & P. Ry. Survey, Block 35, T-3-S, about 6½ miles southwest of Fleetborn Oil Corporation and Mid-Continent Petroleum Corporation's Dodson 1, which was recently abandoned after logging numerous oil showings in the upper section of the Permian lime.

In Pecos County, near Imperial, Abell Brothers, Midland, Texas, and others are negotiating for a 6000-foot test on their wildcat block acquired early this year. Location may be in Section 24, Block 9, H. & G. N. Ry. Survey.

TEXAS PANHANDLE Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GRAY COUNTY—		
Tom W. Doswell et al, W. L. Herndon 1	61	3369
Empire O&R Co., Cunningham 7	713	3292
Gulf Oil Corp., R. B. Thompson 14	277	3280
W. J. Moran et al, L. Holmes 2	563	3190
Skelly Oil Co., H. Schafer 73	920	3336
HUTCHINSON COUNTY—		
Harry Stekoll-Darby Pet. Co., Dial-Perkins 2	419	3022
Harry Stekoll et al, Whittenburg 7-H	264	2963
L. L. Travis et al, J. T. Hodges 1-A	481	3082
WHEELER COUNTY—		
Alma Oil Co., Perkins-Gulf 3	326	2440
DuMar O&G Co., P. & M. Macina 1	¶25.4	1901
Phillips Pet. Co., L. Gregg 3	¶4.3-224	2089
Skelly Oil Co., Johnson 20	835	2562
Smith Bros. Ref. Co.-Hanlon-Buchanan, Sitter 4-A	¶12.3-1581	2566

*Failures; †Junked; ¶Million cu. ft. gas.

WEST TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CONCHO COUNTY—		
Walter C. Nelson et al, Jim Rice 1	*	1974
CRANE COUNTY—(San Hills Field)—		
Sinclair Prairie et al, J. B. Tubb 1	210	4466
ECTOR COUNTY—(Goldsmith Field)—		
Wm. H. Dunning Jr., H. E. Cummings 1	405	4252
Gulf Oil Corp., Goldsmith-Scharbauer 6,	¶8.8	4260
GLASSCOCK COUNTY—		
Conoco & Group 1 Oil Corp., Settles 6-S	454	1240
HOWARD COUNTY—		
Conoco & Group 1 Oil Corp., Settles 21	727	2449
Sinclair Prairie, Dodge 34	651	2800
Southern Oil Corp., W. P. Edwards 1	*	3006
PECOS COUNTY—(Pecos Valley Field)—		
Schermerhorn Oil Corp., P. V. Oil Co.-Humble 1	50	1734
PECOS COUNTY—(Yates Field)—		
Marathon Oil Co., Yates 10-D	120,000	1293
REAGAN COUNTY—(Big Lake Field)—		
Big Lake Oil Co., University 183	75	3079
WARD COUNTY—		
Abell Bros-Tex-Mex Pet. Corp., Potts-Humble 2	346	2355
W. A. Black & Son, A. B. Gordon 4	1273	2532
Bond Oil Corp-Bohago Oil Corp., J. W. Maxwell 4-A	1507	2530
California Co., L. A. Adams 3	921	2584
WINKLER COUNTY—(Brown-Altman Field)—		
Amerada Pet. Corp., Walton 1-A	367	3150
Humble, N. R. Colby 1-B	279	3183
WINKLER COUNTY—(Holley Field)—		
Skelly Oil Co., S. M. Halley 10	390	2892
WINKLER COUNTY—(Henderson Field)—		
R. H. Henderson et al, Walton-Humble 1-B	2500	3045
WINKLER COUNTY—(Sayre Field)—		
Sayre Oil Co., J. F. Howe 8-B	792	2977
Tide Water, J. B. Walton 3	1431	2949

*Failures; †Junked; ¶Million cu. ft. gas.

Lopez Extended

MAGNOLIA'S WELL MAKING 10 BARRELS HOUR THROUGH JET

SOUTH TEXAS — WEEKLY STAFF REPORT

Laredo.—A mile northeast extension to the Lopez field, further expansion of the Loma Novia sand production in Seven Sisters field, and failure of a key wildcat in the Rhode Ranch sector were feature happenings in the Mirando District during the week.

Magnolia Petroleum Company's Peal, one mile northeast of the Lopez field, and in Duval County, is making 10 barrels per hour through a gas jet from the Mirando sand topped at 2114 feet. It is bottomed at 2121 feet.

Three wells have been completed and a fourth is in process of completion along a one-mile northeast-southwest trend flanking the Seven Sisters field of Duval County. These wells are in the Loma Novia sand at around 2700 feet and indicate that this type of development is going to attract considerable drilling in the near future. The field also has production in the Chernoskey sand at 2100-2200 feet and in the Government Wells sand at 2500 feet.

One mile southwest of the Rhode field in McMullen County, Trenchard's Roos 1-A topped the Government Wells sand at 2606 feet and found saturation in the first two feet. Salt water showed in the next four feet and the well is going ahead. Offsetting the discovery well on the South, Humble Oil & Refining Company's Rhodes 1 made a gasser in the Cole sand at 1795-1807 feet, casing set at 1780 feet.

NORTH TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
Bonner Co. et al, M. Taylor 1, blk 20	3	735
Brazelton Bros., R. O. Andrews 1, sec 1399	*	1030
Continental Oil Co., Claud Cowan 1	2	1010
J. H. Turbeville 1-C	*	1039
Luther Hedrick et al, Carrie Threet 1, blk 91	*	1152
Huggins Oil Co., J. J. Perkins 1, blk 13	5	665
D. L. Pickering et al, J. A. Bell 1, sec 14	*	364
Underwood Drl. Co. et al, Campbell 15-B, sec 1383	*	1016
COOKE COUNTY—		
Anderson-Kerr Pet. Co., G. A. Stelzer 1	*	2595
Hudspeth et al, Truebenbach 7-B	25	938
Keil & Keil, J. J. Perkins 1	40	1048
Lanier-Riddle & V. V. Waite, J. Thetford 1	*	1836
Moore & Regis Oil Co., F. J. Yosten 2	30	965
United Prod. Co., Trew 2	150	1180
JACK COUNTY—		
Bryson O&G Co., G. E. Everett 1	*	4525
Lewis Prod. Co. et al, F. Rankin 1	¶2-600	3003
MONTAGUE COUNTY—		
Continental Oil Co., C. A. Dodgin 3	71	1582
FHE Oil Co., D. A. Lauderbach 3	15	1248
WICHITA COUNTY—		
F. P. Cullum et al, Burnett 2, sec 3	*	672
Douglas Bros. & Johns, Douglas 9-B, sec 2	*	852
Tom B. Medders et al, Fassett-Tuttle 1-B, sec 2	*	1407
The Texas Co., W. P. Herron 7, sec 9	56	1060
Waggoner Ref. Co., Waggoner Est. 7-AA, blk 148	100	1601
WILBARGER COUNTY—		
Fain-McGaha Oil Corp., Waggoner Est. 12-Y, sec 43	420	2414
YOUNG COUNTY—		
Chambers & Humphreys, Benson 4, sec 1392	*	985
F. A. Clarida et al, W. H. Clarida 1	*	597
Duncan et al, Benson 12, sec 1391	200	906
Leon Gaines et al, Jeffery 1, sec 49	*	840
Honea & West, G. P. Stewart 2, sec 1492	25	847
Horwitz & Oldom, S. B. Street 1, sec 316	*	1020
Kimmell, Lee & Co., Cullers 11, blk 19	10	573
Kriss & Alexander, Belknap 3, sec 23	*	647
J. J. Moran et al, Howard 11, sec 3401	63	925
Premier Inv. Co., C. J. Taack 1, sec 263	*	762
H. M. Tebay et al, F. M. Rushing 1, sec 213	*	1123
Underwood Drl. Co. et al, Campbell 18-C, sec 3401	*	939

*Failures; †Junked; ¶Million cu. ft. gas.

HEAVY DRILLING Planned for Southwest Texas coast district

Corpus Christi.—A further increase in both wildcatting and field development work is assured the highly active Southwest Texas Gulf Coast. Plans have been announced for extensive programs in the several fields opened during the past few weeks as well as in unproven areas through the general trend.

Taft field, San Patricio County, continues to be extended northwest in the 4000- and 4900-foot sands, and offsetting campaigns are being launched. At first it appeared as though this field was going to be a small proposition, but it now presents a changed picture, work being centered around the development to the northwest.

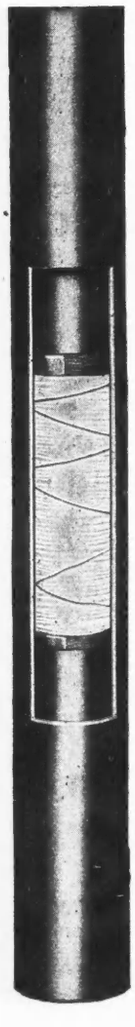
Benedum and Trees' E. H. Welder 2, 3½ miles northeast of Sinton and between the Plymouth and Sinton fields, is plugging back from the contract depth of 7019 feet and testing sands at 5700 feet and 6100 feet. Its showings have been sufficiently encouraging that three wells are being drilled on trend within 1½ miles of this test.

Plymouth field, same county, is the center of an aggressive development campaign on the part of several companies. Its 5600-foot sand is proving unusually prolific and the proven limits are being constantly expanded.

Northeast of Plymouth, but in Re-

THE LAYNE

RATCHET PACKER



Does not need **FINGERS OR SLIPS** *to prevent creeping up in the casing when exposed to* **HIGH PRESSURE**

IT GIVES A 20" PACK OF ALMOST IRON HARDNESS

The LAYNE & BOWLER CO.
HOUSTON · TEXAS

fugio County, Benedum and Trees have made a deal for 3200 acres out of the Welder lands and are making locations for the first two tests, reported to be contracted to 7000 feet. Mills Bennett et al are commencing the first of two deep tests in the same general area. E. W. Price and Southwestern Development Syndicate, Ltd., have let contract to Harrison Drilling Company for Woods 1, a 6000-foot wildcat to be drilled near Woodsboro in the same county.

Tomoconnor, Greta and Fox fields are being tied into one by a series of large producers in the 5800-foot sand. This horizon is one of the most prolific along the entire Gulf Coast, ranging up to 200 feet in thickness and being entirely saturated. Two excellent producers were added in this sand during the past week.

Stanolind Oil & Gas Company's E. W. Raney, west offset to the discovery oil well of the Bentonville field, Jim Wells County, topped the sand at 5364½ feet and cored in to 5367 feet, finding saturation, and is taking another short core before attempting a drill stem test. The north and northwest offsets to the discovery well, however, failed to find the sand. Stanolind Oil & Gas Company's J. E. Sain 1 is drilling in hard sand at 5490 feet.

Edwin M. Jones' R. Adams 1, wildcat 1½ miles west of Alfred, also in Jim Wells County, is drilling at 4500 feet, having topped the Discorbis at 2718 feet. This is considered rather high and the well is being closely watched.

Further extensions to the new 5800-foot Frio sand production on the west side of Saxet Field, Nueces County, has attracted additional drilling to this sector. In addition, several new outpost wells have been commenced in an effort to bring additional acreage within the proven limits. The newest extension is W. W. Chapman, Trustee's Morgan-Clark 1, approximately one-fourth mile northwest of former 5800-foot production. It is in sand at 5797-5851 feet, with casing being on bottom to be gun perforated. It was deepened from 4900 feet. A number of other shallower wells are to be carried to this level.

Wild Well Controlled

After running wild nearly a week, O. W. Killam's Betty Ellich 1, wildcat one mile south of the Clara Driscoll field, Nueces County, has been brought under control. It is to be recemented and reworked in effort to complete as a producer. The well, bottomed at 3899 feet, blew out flowing several thousand barrels of oil per day along with a large amount of gas. It blew a short string of casing from the bottom of the hole and apparently drilled itself deeper, allowing a large amount of salt water so come in. It is an important extension to the Clara Driscoll field, which until now has only one producer.

The Corpus Christi (Saxet Heights) field continues its drilling orgy with scores of wells active.

A rather heavy drilling campaign is expected to result from deals underway or completed during the past several days in the Heyser district of Calhoun County. Humble Oil & Refining Company and Plymouth Oil Company's P. H. Welder 2, discovery well in the field, in the northeast portion of the block, indicates that the field will not be entirely controlled by these companies but will include considerable acreage to the northeast. As a result, P. H. Welder is reported to have completed a lease deal with the Portilla Oil Company (R. H. Welder et al) whereby the latter acquired a 2000-acre strip bordering the Humble-Plymouth block on the north and east. This block is 933 feet (one location) wide, hence an offsetting campaign is in prospect. Blanco Oil Company and Al Buchanan also are reported to have completed a rather large lease deal for acreage in the close proximity of the new producer and will commence drilling operations immediately.

Steinberger Petroleum Corporation has made location for Drushel 1 in the Edna Gas field, Jackson County. Drushel 1 is 466 feet out of the northeast corner of the west 40 acres of lot 6, Gale subdivision of Hayes Ranch, F. Rodriguez Survey. The operators are moving in a large derrick which will go to 7200 feet and penetrate the Cockfield formation. The well is being drilled on a sub-surface high and an old torsion balance picture. Steinberger Petroleum Corporation has full interest in 5385 acres and half interest in another 5385 acres in the area.

BALCONES FAULT

Test in Zavalla County showing oil in chalk

San Antonio.—Amerada Petroleum Corporation has commenced three more wells to the 5600-foot Austin chalk horizon in the Pearsall field, while several wildcats along trend are at interesting depths. All of the Amerada wells are in the heart of the Frio County producing area and are offsets to present producers.

Bay Oil Corporation's National Bank of Commerce 1, in the southeast corner of Zavalla County, and about 12 miles southwest of the Pearsall field, failed to make a producer in the upper Austin chalk at 5828 feet, but after deepening to 6162 feet, in the lower chalk, it showed considerable saturation, and tests are being made. The well set casing at 5724 feet after topping the chalk at 5717 feet.

An Important Well

The above well is one of the most important wildcats drilled along the lower Balcones Fault zone since the opening of the Pearsall field. There have been two deep wildcats drilled in the general area during the past few months, but neither proved productive.

Joe Deupree's Russell 1, which recently opened a new field in Bexar County at about 1100 feet, blew out while a potential test was being made late in the week. It caught fire and burned for several hours. It has been producing about 50 barrels of oil per day along with some salt water.

Clark et al's Williams 1, wildcat southwest of the South Darst Creek field, Guadalupe County, is showing for a very small producer in Austin chalk at 2495 feet after being acidized. Austin chalk development in this county is showing a further increase, with two new fields reporting fair producers.

BEE COUNTY STRIKE

Wildcat may usher in new field near West Tuleta

Beeville.—A new field for Pettus district appeared possible late in the week with a drill stem test being made of saturated Pettus sand at 4017-21 feet in Howeth & Swiger's C. A. Voss 1. The well is in the northwestern portion of the Samuel Mays Survey, about two miles southwest of the Ray extension to West Tuleta field, Bee County. While there are no dry holes between this potential producer and the present field, it is not considered likely that it connects with the field.

A drill stem test late June 12 failed when the tool failed to operate and a second test was being made.

Several important prospects in the Pettus district were eliminated from the probable production list during the past week as wildcats were abandoned as failures. These, however, were offset by an unusual increase in number of new unproven locations in Live Oak, Bee and Goliad Counties.

George M. Church et al's George A. Ray 1, two miles east of Beeville, Bee County, failed to develop production in the 4400-foot sand and is going ahead. Lonnie Glasscock's Holzmark 1, 1850 feet west of the Holzmark field, failed to develop commercial production in the Hockleyensis sand just below 3400 feet, despite some saturation. It is to drill to the Yegua sand. Fred Haworth, Jr., is waiting on cement after recementing J. E. Copeland 1, 3½ miles northwest of Pettus. It showed gas and salt water through perforations at 3460-69 feet, in the Pettus sand. Luling Oil & Gas Company's B. B. Ruhman 2-A, south offset to the first well drilled in the Caesar field and about two miles northeast of that field, is an abandonment at 3265 feet. United Production Corporation's Ray 53, just north of Pettus field, has been abandoned at 4125 feet.

R. H. Feltner et al's J. T. Carter et al, in the southwestern portion of Live Oak County, has been abandoned at 3753 feet.

EXPECT EXTENSION

Samfordyce gas sand test shows considerable oil

Mission.—A 1700-foot north extension to the 2800-foot, or second sand, of Samfordyce field, Hidalgo County, was anticipated as a result of the showing encountered in G. W. Wheeler's Felipe Farias 2. The well made a series of drill stem tests between 2828½-53 feet in sand and sandy shale which showed considerable oil. It was drilled to 3200 feet and plugged back to about 2900 feet where casing was set. A test will be made through perforations.

No producers have been completed in this sand to date. J. T. Barlow et al's Cpaha 1 made a producer at 2966 feet, but due to the high gas/oil ratio, it was deepened to 3200 feet. It has been plugged back to 2800 feet, to be sidetracked, and will recore sand at 2936-55 feet.

This producing horizon is on the north side of the Samfordyce field, where wells in the regular producing level, about 150 feet shallower, produce gas.

Union Sulphur Company has three wells in the 7500-foot horizon in Mercedes field, Hidalgo County, but none is showing for large production. Two are shut down for orders, while the third is making a production test. In the Mestenas field, same county, Gulf States Development Company is trying to complete Engelman 3 in the 6600-foot horizon. It is showing for a gasser spraying distillate.

South Texas registered another big week in completions, there being 68 wells on the final list. Of this number, 50 were producers showing an initial flow of 29,257 barrels per day. Four were gassers and 14 were failures.

SOUTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BEE COUNTY—		
Luling O. & G. Co., B. B. Ruhman 2-A, 2750 ft sel, 900 ft swl of J. M. Thurston sur	*	3265
The Texas Co., S. E. Young 25, Young sur, A-536 (Dirks)	385	3953
United Prod. Co., G. A. Ray 53, T. Hanson sur (Pettus)	*	4125
BEXAR COUNTY—		
Nus-Wald O. & G. Co., S. Wetz Estate 9, S. Jett sur No. 53 (Von Ormy)	7	620
DUVAL COUNTY—		
Bridwell Oil Co., Bishop Cattle Co. 14, sur 76 (Loma Novia)	385	2625
M. C. Hubberd 4-A, sec 71 Loma Novia)	115	2658
Wm. Hubberd 8-C, sec 75 (Loma Novia	375	2573
Frank Gravis et al, Flodin 4, sec 78 (Loma Novia)	576	2533
Highland Oil Co., M. C. Hubberd 14, sec 72 (Loma Novia)	288	2770
Humble, M. C. Hubberd 39-B, sec 72 (Loma Novia)	1150	2738
M. C. Hubberd 51-B, sec 72 (Loma Novia)	515	2768
M. C. Hubberd 53-B, sec 72 (Loma Novia)	315	2795
Ruiz Estate 12, sec 553 (Loma Novia)	450	2774
R. Serna, Jr. 14-A, sec 384 (Seven Sisters)	1030	2483
M. C. Hubberd 46-B, sec 72 (Loma Novia)	950	2754
M. C. Hubberd 54-B, sec 72 (Loma Novia)	660	2780
T. D. Smith 13, sec 382 (Seven Sisters	288	2420
L. & P. T. Wright 5, sec 118 (Seven Sisters)	477	2517
Magnolia Pet. Co., C. W. Hahl 37, sec 67 (Loma Novia)	430	2659
C. W. Hahl 38, sec 67 (Loma Novia)	430	2661
J. B. Peal 1, 1669 ft n of ne cor of sur 73 & 330 ft wl of sec 383 and in sur 383 (¾ mi ne Lopez field)	240	2121
Navarro Oil Co., J. F. Welder heirs 5, sec 383 (Seven Sisters)	575	2483
Pan American Prod. Co., J. F. Welder heirs 1-C, sec 383 (Seven Sisters)	460	2462
Otis Phillips No. 1 S. Benavides, blk 134, Hale subd. Arispe Gr. Cole)	*	3250
Reliance O. & R. Co. et al, Drummond 3, sec 308 (Seven Sisters)	1008	2510
P. L. Telford, sec 386 (Seven Sisters)	205	2712
Santa Clara Oil Co., J. F. Welder heirs 6-B sec 383 (Seven Sisters).	625	2487
Shell Pet. Corp., Bishop Catttle Co. 2, sec 59 (Loma Novia)	575	2563
J. F. Welder heirs No. 1-A, sec 103 (Loma Vista)	*	3188
J. F. Welder heirs 8-A, sec 385 (Seven Sisters)	505	2472
J. F. Welder heirs 9-A, sec 385 (Seven Sisters)	*	lcn
Smith & Hamill, M. C. Hubberd 19, sec 77 (Loma Novia)	575	2692
Stanolind O. & G. Co., Yates Ranch 4, 2142 ft wl, 3149 ft sl sur 560, ½ mi sw disc well in Labbe field, pb & comp in sand 2446-2451	¶1½	4054
Sun Oil Co., Sutherland 1, sec 122 (Hoffman) pb to 2736, comp in pb hole at 2761 ft	¶25	3262
The Texas Co., Hugo Wendt 42, sec 68 (Loma Novia)	1410	2638
Westheimer & Daube, Z. Campos 11, sec 224 (Seven Sisters)	195	2674
Windsor Oil Co., W. R. Peters, 3-B, 990 ft sl, 330 ft el sur 34, 1 mi sw North Kohler field perf 2600-15	¶25	2799
HIDALGO COUNTY—		
Rogers & Rogers, F. B. Guerra 5, tr 254, porc 41, Reynosa juris (Samfordyce) perf 2752-57	140	2760
JIM WELLS COUNTY—		
Joe E. Walsh, W. D. Wade 2, 270 ft sl & el of lot 2, blk "C" Bode subd	*	1200
LAVACA COUNTY—		
J. D. Aiguier et al, A. A. Staffa 1, 2400 ft swl, 6400 ft sel, W. R. Hensley sur	*	2998
LIVE OAK COUNTY—		
R. H. Feltner et al, John T. Carter & Bros 1, 1847 ft nwl of sur, 330 ft nel of nw 120-ac of w 160-ac of sec 139 T. T. Ry. Co. sur	*	3753
McMULLEN COUNTY—		
Humble, D. W. Rhodes 1, sec 78 (Rhodes)	¶20	1807
Swearingen & White, Lark Estate 1, blk 42, E. W. B. Scrugham sur	*	997
NUECES COUNTY—		
Capitol Oil Co., B. Gravis et al 1, blk 11, Bancroft Farm lots (Saxet Heights)	490	4082
Coastland Oil Co. & Keystone Royalties, Page Bros 1, sh 2, Geo. Franks subd, owdd, otd 5856	*	5931
J. K. Culton, N. J. Cantwell 1, Villareal Gr (Saxet Heights) perf 4080-90	780	4100
Tom Graham, L. C. Curry 1, Villareal gr (Saxet Heights)	58	4096
Harmon-Flood, blks 4 & 5, Ellendale Gardens 1 (Saxet Heights).	745	4081
W. B. Hinton, E. B. Cole 1, Villareal gr (Saxet Heights)	1280	4873
Port O. & G. Co., C. R. Gibson 1, blk "B" Harbor View add (Saxet Heights)	547	4065
H. M. Reed & S. H. Bartlett, C. Carson 1, Villareal gr, perf 4077½-80	1440	4126
G. M. Richardson, Wm. Gerhartd, 330 ft nl, 660 ft el of 208.65-ac tr, sec 79, George H. Pauls subd, A. F. de la Fuente sur	*	6010
Westgate Oil Co., Sturm state 3, Villareal gr (Saxet Heights)	470	4090
REFUGIO COUNTY—		
HeWitt & Dougherty, M. F. Lambert 24, blk 25, HeWitt & Dougherty subd, Hardwick sur, pb 5816-2565		5922
United Prod. Co., W. J. Fox 18, Hews & Brown sur	4000	5880
SAN PATRICIO COUNTY—		
Plymouth Oil Co., E. H. Welder 48-C, sec 49, Welder Ranch subd.	625	5502
STARR COUNTY—		
Sun Oil Co., Chapotela Lnd Co. 3, porc 99, Camargo Jurjs (Samfordyce)	*	3500
Otto W. Woods, H. P. Guerra 1, 430 ft nel & 330 ft sel of lot 35, Conroe subd, porc 50, Mier juris	*	504
VICTORIA COUNTY—		
Harrison & Abercrombie, Sturdevant 2, Brownson sur ab 382	495	4776
WEBB COUNTY—		
Mills Bennett, Maria Lopez 8, sec 118 (Lopez)	575	2250
Five Spot Drlg Co., A. M. Bruni 1, blk 44, Brown subd, Albercas de Arriba gr	50	1733
C. H. Lewis, Alonzo Lopez 6, sec 110, blk 1 (Lopez)	345	2928
G. G. Mortimer, Maria L. Lopez 11, sec 112 (Lopez)	445	2252
Texla Oil Corp., S. Benavides 3-D, blk 368, Hale subd, Arispe gr (Cole)	155	2892
WILLIAMSON COUNTY—		
Fred Hughes, M. Bachmeyre 1, Browning sur	*	1200
ZAPATA COUNTY—		
S. R. C. Oil Corp., Mrs. I. G. Trevino 11-C, blk 13, sec 65 (Escobas)	18	1279
The Texas Co., Whitehead 89, Cerrito Blanco gr (Escobas) pb 1293	30	1840
Upchurch & McKay, Haynes 2, sec 7, Haynes subd, Comitas gr (Comitas)	60	881

*Failures; †Junked; ¶Million cu. ft. gas.

Output Increases

FROM DISCOVERY WELLS OF TWO NEW COASTAL FIELDS

WEEKLY STAFF REPORT

Houston.—Stanolind Oil & Gas Company, in partnership with Amerada Petroleum Corporation, made its sixth consecutive strike on the Texas Gulf Coast when Dopsalus 1 on the Stasuma-Fairbanks prospect, Harris County, came in June 5 making gas and the next day started producing 45 gravity oil from the Cockfield formation at 6822 feet.

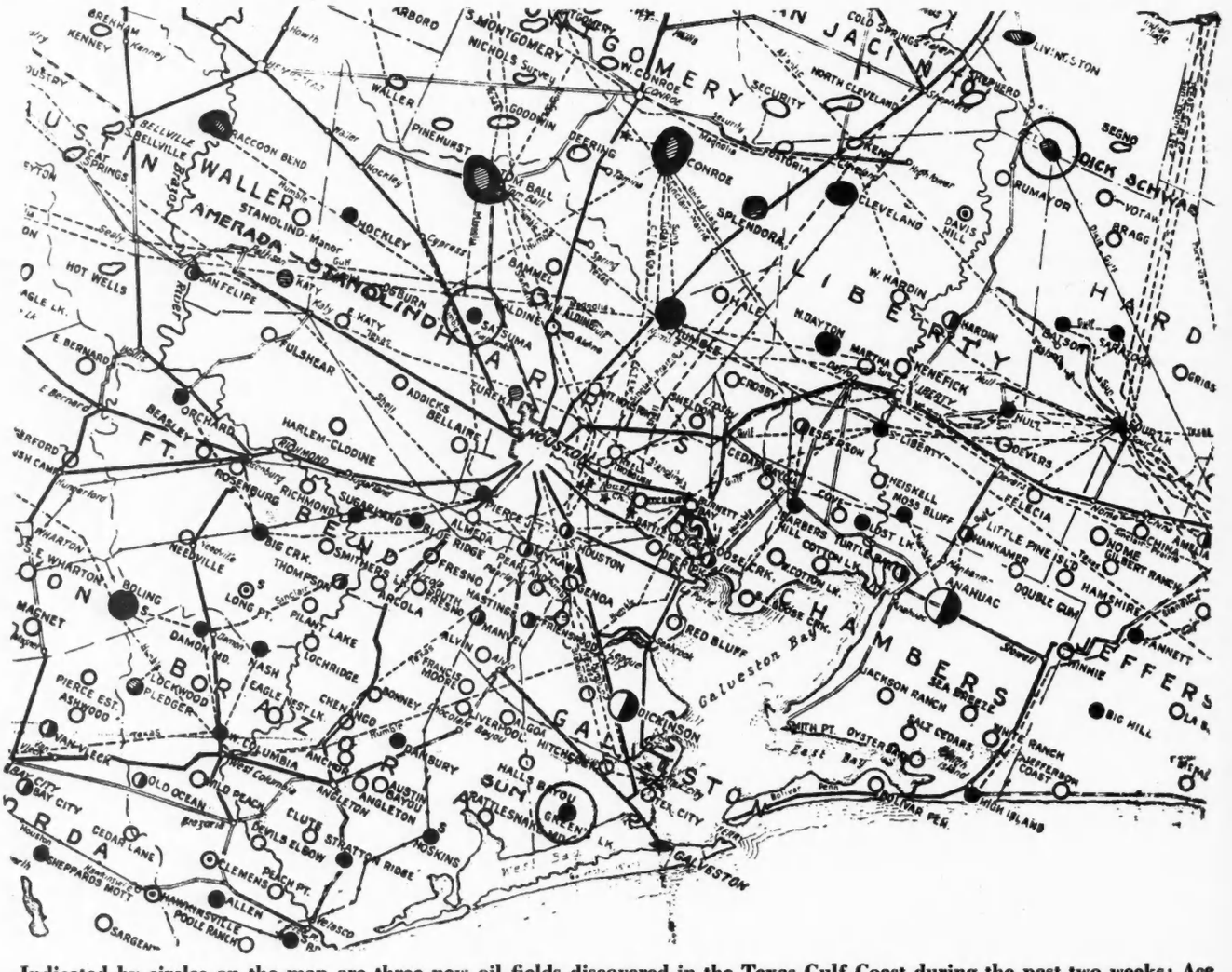
On a potential test made June 11, 1936, Dopsalus 1 produced 128 barrels of oil and 2,800,000 cubic feet of gas through a quarter-inch choke with a casing pressure of 2490 pounds in 24 hours. The oil tested 44.8 gravity. Dopsalus 1 has increased its production steadily during the past week after coming in making 4.3 barrels per hour through a 13/64-inch choke.

Dopsalus 1, W. C. R. R. Survey, Section 2, showed for an oil well some time ago, but was drilled to 7520 feet and found the lower formations barren. It was plugged back and seven-inch casing was cemented at 6866 feet. The casing was perforated with five shots from 6820½ to 6822 feet. Initially the wildcat made 2,400,000 cubic feet of gas through a quarter-inch choke. Initial tubing pressure was 2350 pounds; casing pressure was 2450 pounds. Production is coming from 280 feet below the top of the Cockfield formation, which was topped 6540 feet.

May 18, 1936, Stanolind Oil & Gas Company & Amerada Petroleum Corporation made a drill stem test on Dopsalus 1 from 6789 to 6826 feet which showed 60 feet of 47 gravity oil and a 420-pound pressure.

Dopsalus 1 is approximately 50 feet higher than Hill & Hill's C. R. Wharton 1, which had salt water sands from 6855 to 6885 feet. Hill & Hill set seven-inch casing at 7049 feet, perforated from 7034 to 7048 feet, and swabbed salt water. Amerada-Stanolind's Dopsalus 1 is approximately 1280 feet from the north line and 330 feet from the east line of a 177-acre tract.

Satsuma originally was a torsion balance prospect of Humble Oil & Refining Company, which worked the area in 1928. Gulf Oil Corporation is reported to have received a reaction with torsion balance. The 8000-acre block was taken by Ralph Johnson in June, 1934, a portion of 12 surveys being included. The block later was extended to the old W. B. Hamilton block, where a test drilled lost the hole before reaching the contract depth. Amerada &



Indicated by circles on the map are three new oil fields discovered in the Texas Gulf Coast during the past two weeks: Ace field, Polk County, opened by Dick Schwab; Satsuma field, Harris County, opened by Amerada-Stanolind; and Green's Lake field, Galveston County, opened by Sun Oil Company.

Stanolind are reported to have spent around $150,000 on the block.

Since entering the Gulf Coast over two years ago in active wildcat drilling Stanolind Oil & Gas Company has been very successful. The company's first wildcat was drilled in partnership with Amerada Petroleum Corporation on the Katy prospect in Waller County. In June, 1934, the operator's Mary Manor 1 showed 15½ million cubic feet of gas on a drill stem test from 6596 to 6610 feet and was later abandoned. February 15, 1935, Stanolind Oil & Gas Company completed Thorp 1, which was drilling on a unitized block on the Katy prospect. It was completed as a gas and distillate producer at 7647 feet in the Upper Saline Bayou. The well, now shut in, was the first to drill over 1400 feet into the Cockfield formation without encountering salt water. Results of the two wildcats on the Katy structure give the area a reputation of being as large as Conroe structure in Montgomery County, which is one of the most important reserves in the Gulf Coast.

The first big strike in the Texas Gulf Coast for Stanolind Oil & Gas Company was in the J. W. Surface 1, on the Hastings prospect in Brazoria County, December 23, 1934. Since that time the field has developed into one of the most prolific fields in the Gulf Coast with a sand section of over 500 feet and a conservative ultimate yield of 125,000,000 barrels of oil.

The second major strike for the operators in the Texas sector of the Gulf Coast was at South Houston in Harris County. Stanolind Oil & Gas Company's drilling District 17 (Fee 1), made 12 barrels of 26.8 gravity oil per hour July 13, 1935. On December 24, Stanolind made its fifth consecutive strike in A. D. Middleton 1 at Turtle Bay in Chambers County. The latest strike for the operator was at Satsuma in Harris County.

Production of Sun Oil Company's Hughes 1, Green Lake discovery well, W. C. M. Baker Survey, Galveston County, has increased remarkably during the past week. June 11 a potential test was taken and Hughes 1 produced 416 barrels of 24 gravity oil in 24 hours through a three eighths-inch choke on the drill stem. The pressure on the tubing is remaining constant at 350 pounds.

The discovery well came in June 5, and after flowing for 13 hours the well made 220 barrels of fluid, 65 percent oil and 35 percent salt water and sand. The wildcat was flowing through the drill stem from basal Pliocene sand at 3610 to 3620 feet after the casing was perforated.

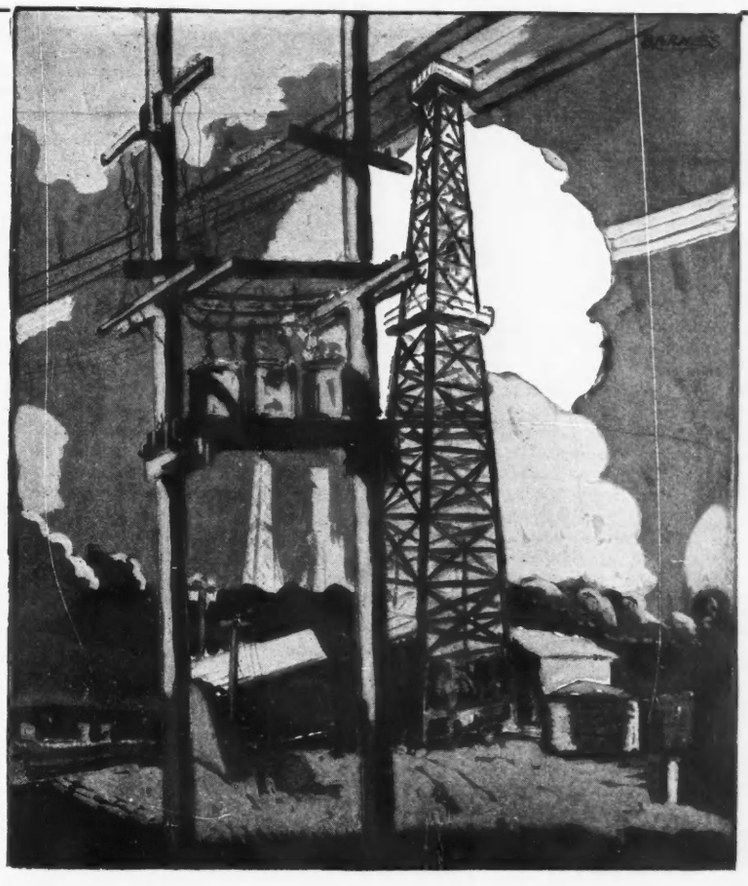
During the week the operators killed the well and pumped in 100 sacks of cement through the perforations for a successful "squeeze" job. Upon making a drill stem test of the cement the well came in flowing pipe line oil at the estimated rate of 230 barrels daily through the testing tool. At the end of the week the well had increased its flow to 416 barrels daily through the drill stem. Creditable technique was employed in shutting off the salt water after completing the "squeeze" job. The casing was not perforated the second time.

Sun Oil Company has erected two 1000-barrel storage tanks and will probably construct two additional 1000-barrel tanks before another location is made. The operators will let the well flow and see how it performs. If it proves satisfactory a new location will be made and fuel will be furnished from the discovery well. If production is developed in large quantities at Green's Lake, a pipe line will probably be laid east to Stanolind Pipe Line Company's 12-inch trunk line running to Texas City. From there Sun Oil Company could barge the oil to its refinery.

Dick Schwab's Kirby Lumber Company 1-A, discovery oil well for Ace field, T. A. Sublett Survey, Polk County, which came in the previous week making 11 barrels per hour from the Cockfield formation at 4815 feet has been shut in on account of legal entanglements. On a 24-hour gauge ending June 9, Kirby Lumber Company 1-A produced 66.24 barrels through a 10/64-inch choke with a tubing pressure of 1375 pounds and a casing pressure of 1575 pounds. The day before the well made 71.76 barrels through a 10/64-inch choke. Since the well has been completed the pressure has been increasing. Some alarm is felt that the well will finally go to gas and produce distillate.

Another disappointing well drilled in the Hardin area, Liberty County, was Jack Frazier's Serles 1, 10,000 feet northwest of the discovery well. Serles 1 was abandoned at 7702 feet in the Upper Saline Bayou after testing salt water from 7479 to 7489 feet.

On the Silsbee prospect, Hardin County, Republic Production Company abandoned at 7077 feet, Burrell 2, the



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second wildcat drilled by the operators in the area. Salt water sand was logged from 6615 to 6632 feet in the Cockfield formation. Burrell 2 is 1500 feet due north of Burrell 1 in the A. A. Burrell Survey, Hardin County.

Withers field, Wharton County, was extended 13,000 feet west June 11 when The Texas Company brought Pierce Estate B-1 in as a dry gasser from 5537 feet. Pierce Estate B-1 logged a sand from 5503 to 5506 feet with an odor of oil and drilled on to 6511 feet. After plugging back to 5350 feet a drill stem test was made from 5490 to 5508 feet which showed dry gas. Another drill stem test taken from 5510 to 5520 feet through quarter-inch chokes in 11 minutes showed two gallons of distillate and 700 pounds pressure. Seven-inch casing was cemented at 5537 feet, and a production test showed dry gas. Tubing pressure registered 1800 pounds and casing pressure 1900 pounds. The shut in pressure June 12 was 2000 pounds.

Some are of the opinion that The Texas Company's Pierce Estate B-1, E. T. R. R. Survey, Abstract 108, is located on a different structure from that of the Withers field proper, while others contend that the well is on the same structure. The only way which this argument can be determined will be drilling wells between the two producing areas. The Texas Company took the Pierce Estate in three blocks. The A block was drilled and is now known as Pickett Ridge field, the C block was drilled and has since developed into Withers field, and now the B block has been drilled, produces gas, and has no name.

The Texas Company was preparing to complete Pierce Estate C-7, J. Caldwell Survey Withers field, Wharton County, June 12, at 5565 feet and extend the field 900 feet west. The crew logged gas sand at 5485 feet and oil sand at 5520 feet. After setting seven-inch casing at 5566 feet the crew was washing the well in. Pierce Estate C-6 was also being completed at the end of the week. Oil and gas sand was logged at 5475 feet and 5549 feet respectively. Seven-inch casing was set at 5567 feet.

East of the Blue Basin prospect and southeast of Withers field, Cockburn Oil Corporation has made location for a wildcat to be drilled on the Magnet prospect, Wharton County. Fee 1 is 610 feet south and 525 feet west from the northeast corner of Smith and McKenzie Survey in the east part of lot 8, block 111. The wildcat is about three miles west of Magnet. It is reported but not confirmed that W. R. Davis took half interest in Cockburn's 1500 acres in the Magnet area and has agreed to drill three wells.

Northwest of the Withers field and on the flank of Pickett Ridge field, Wharton County, The Texas Company completed Pierce Estate A-21 for 530 barrels of 24.9 gravity oil daily through a quarter-inch choke from 4712 feet. On the west side of the field, Adrian Moore's W. P. Wilbeck 1 is being drilled deeper from 4703 feet. A 10-minute drill stem test made from 4679 to 4703 feet showed 750 pounds gas pressure and one joint of oily mud.

Humble Oil & Refining Company's Middleton 17, H. & T. C. Survey, Section 60, gave indication of extending the Anahuac field, Chambers County, over 1500 feet east last week when a drill stem test made over 75 feet below the top of the water level for the field, showed oil. The test was made in Marginulina formation from 7222 to 7235 feet through quarter-inch chokes and showed 120 feet of oil, 30 feet of oil and mud, and 450 pounds pressure. Seven-inch casing has been set.

The southeast side of the Anahuac field, Chambers County, was defined by Humble Oil & Refining Company's Middleton 18, H. & T. C. Survey, Section 62, after testing salt water and drilling to 7382 feet in shale. Salt water sand was cored from 7177 to 7188 feet.

Northeast of the Amelia field, Jefferson County, H. J. DeArmond's State National Bank 1, J. Bigner Survey, got a dose of salt water last week from 6070 to 6078 feet. At the end of the week the operators were drilling below 6100 feet in shale.

Southwest of the discovery well at Amelia, Humble Oil & Refining Company's Quinn 2 was being washed in June 12 at 6776 feet. Quinn 2, C. Williams Survey, was drilled to 6776 feet in sand showing oil. Top of the gas sand was logged at 5737 feet and the top of the oil sand was encountered at 6758 feet. Seven-inch casing was set at the bottom of the hole and perforated from 6771 to 6774 feet.

South Houston field, Harris County, was extended one location northeast last week when Stanolind Oil & Gas Company installed flow valves at 2020 to 3820 feet and brought Funk 1, Callahan & Vince Survey, in for 98 barrels daily from 4534 feet.

Stanolind Oil & Gas Company also completed Drilling District 23, Center of Lot 4, Block 69, H. & T. B. Survey, No. 5, South Houston field, for 471 barrels daily through a quarter-inch choke.

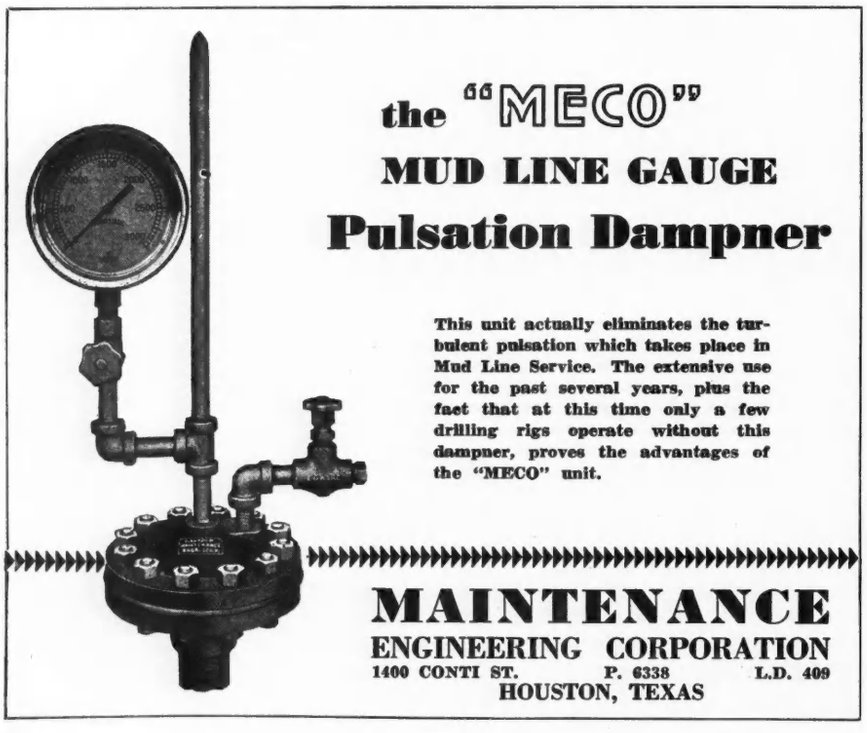
On the west side of the field, Smith & McDannald's Merideth 1 was being completed at the end of the week. The well was drilled to 4035 feet in oil sand with the top of the first sand found at 3956 feet and top of the sand showing oil at 4012 feet.

On the northwest side of the field, Stanolind Oil & Gas Company's First National Bank 3, Callahan & Vince Survey, was drilling in sand showing oil at the end of the week at 4542 feet after topping the sand at 4540 feet.

TEXAS GULF COAST Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANAHUAC—		
Humble, Middleton 18	*	7382
Sun, White 18	660	7088
ARIOLA—		
Republic Prod. Co., Fee 6	10	3826
BARBERS HILL—		
Stanolind, Chambers 17 (WO)	210	5330
Sun, Wilburn 16 (WO)	48	
BLUE RIDGE—		
Ben Bernett, Blakley 2	55	2166
Tran State, Blakley 4	*	4785
CONROE—		
Alpha, Falvey 25	530	5110
South Gulf Oil Corp., Brent 1	*	5173
HARDIN—		
Jack Frazier, Serles 1	*	7702
HULL—		
D. & L. Prod. Co., Mecon-Laton 2	*	4981
MYKAWA—		
West Prod. Co., Irwin 9	*	4053
PICKETT RIDGE—		
Texas C., Pierce Estate A-21	530	4712
RACCOON BEND—		
Humble, Walton 7	312	4145
SOUTH HOUSTON—		
Stanolind, Drilling District 23	471	4775
Funk 1	98	4534
TOMBALL—		
Amerada, Felber 3	*	5201
Humble, Moody 4	99	5586
WEST COLUMBIA—		
The Texas Co., Hogg 58	1300	2661
GALVESTON COUNTY—		
Sun, Hughes 1, Green Lake prospect, W. C. M. Baker sur	416	3620
HARDIN COUNTY—		
Republic Prod. Co., Burrell 2	*	7077
HARRIS COUNTY—		
Amerada-Stanolind, Dopsalus 1, Satsuma prospect, W. C. R. R. sur	128	6866
MONTGOMERY COUNTY—		
H. W. Blumenthal, Delta Land Co. 1, Dacus prospect, J. Beuhn sur	*	4011

*Failures; †Junked; ¶Million cu. ft. gas.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Four Extensions

FEATURE DEVELOPMENT WORK IN SOUTH LOUISIANA

Lake Charles.—A new producing horizon was discovered in the New Iberia last week when The Texas Company's Smith 1, northwest flank test, Section 71-17s-7e, came in making 528 barrels of 31 gravity oil from 6685 feet in the Oligocene formation; Smith 1 also extends the field in the northwesterly direction. The crew drilled Smith 1 to 6685 feet and encountered sands showing oil from 6679 to 6684 feet. Nine and five eighths-inch casing was set at 6685 feet. The well came in flowing through a quarter-inch choke with a tubing pressure of 900 pounds and a casing pressure of 1300 pounds Harry Fotiades' Gulf Land Fee 1, west flank test, Section 25-12s-7e, New Iberia field, Iberia Parish, was completed as a dry hole last week at 3746 feet after encountering salt at 3660 feet. The operator's encountered an oil sand from 3574 feet to 3597 feet. On an electrical logging device the well showed 24 ohms resistivity and 83 milivolts porosity. A 10-minute drill stem test made of the sand through a quarter-inch choke on top and bottom showed five joints of saturated oil sand and half barrel of oil. The pressure was 15 pounds. At 3606 feet the operators cored the same oil sand and at 3609 feet a broken sand and shale was cored. Gulf Land Fee 1 is approximately 600 feet west of Canal Oil Company's Bernard 1, which was completed at 4778 feet to extend the field some time ago. The well is also southwest of The Texas Company's Smith 1.

Wm. Helis' Boliver 2, north flank of New Iberia field, Section 56-12s-7e, Iberia Parish, cored 141 feet of oil sand at the end of the week from 3868 to 4009 feet and were setting seven-inch casing June 12. On an electrical logging device the well showed from 20 to 50 ohms resistivity and from 100 to 120 milivots porosity.

English Bayou Extended

An initial flow of 450 barrels daily from Fohs Oil Company's Castle 11, English Bayou field, Calcasieu Parish, extended the field approximately 800 feet southeast. Castle 11, Section 13-9s-8w, was drilled and cored to 7068 feet in oil sand after topping saturated oil sand at 7062 feet. After seven-inch casing had been set on bottom, a production test yielded 450 barrels daily through a quarter-inch choke with a tubing pressure of 250 pounds. Castle 11 is 800 feet southeast of Castle 9.

The northeast side of the Gillis field, Calcasieu Parish, was defined last week when Union Sulphur Company's Bel 1 was abandoned at 7058 feet in water sand. A drill stem test was made on Bel 1, Section 6-9s-7w, at 6977 feet. It showed 14 fourbles of salt water in 10 minutes through quarter-inch chokes.

On the northwest flank of Gillis field, The Texas Company's Nickerson Fee 9, Section 12-9s-8w, was completed at 6752 feet flowing 540 barrels daily through a 17/64-inch choke with a tubing pressure of 510 pounds. The oil tested 38.6 gravity at 84 degrees F. Oil sand was found from 6744 to 6748 feet. Seven-inch casing was cemented at 6742 feet.

On the west side of Gillis field, Union Sulphur Company was waiting on cement to set on State 16. The crew drilled oil sand at 6749 to 6754 feet. Seven-inch casing was cemented at 6749 feet. State 16, Section 11-9s-8w, will be given a production test over the week end. If it proves successful it will extend the field approximately 600 feet north and west.

Deep Well Abandoned

Gulf Oil Corporation's Irwin 20 failed to produce oil from the deep sand in East Hackberry field, Cameron Parish, last week and was abandoned at 6985 feet after plugging back from 8525 feet in salt. After topping the salt at 8505 feet, plugging back to 6800 feet, and redrilling to 6985 feet, a drill stem test was made of sand from 6978 to 6985 feet. While making the 10-minute drill stem test through two quarter-inch chokes the operators recovered 1920 feet of salt water. Gulf Oil Corporation's Irwin 20, Section 12-12s-10w, is the deepest well yet drilled in East Hackberry field.

Limited Oil Company abandoned Miller Estate 1 on the Cankton prospect, Section 47-8s-4e, St. Landry Parish, last week at 9005 feet. Miller Estate 1 held the interest of South Louisiana operators for some time as it was reported that the well was running higher than normal. Three feet of saturated oil sand was reported from 8380 to 8390 feet.

Two new oil wells were added to the list of producers in Tepetate field, Acadia Parish, last week by Continental Oil Company. The operator's Welsh 2, east offset to A. Ordain 1, Section 28-7s-2w, was finaled in oil sand at 8316 feet for 170 barrels of 39.6 gravity oil through a 5/32-inch choke. Tubing pressure was 1250 pounds; casing pressure was 950 pounds. Top of the oil sand was found at 8301 feet; top of the gas sand was found at 8264 feet. Five and three quarters-inch casing was set at the bottom. Homeseekers 3, west offset to Miller 2, Section 28-7s-2w, was completed June 10, flowing 318 barrels daily through a 3/16-inch choke with a tubing pressure of 1250 pounds and a casing pressure of 750 pounds. Bottom of the hole is 8320 feet. Gas sand was topped at 8288 feet and the oil sand was encountered at 8304 feet. Continental was preparing at the end of the week to complete T. Ortego 2, offset of A. Ortego 1, Section 28-7s-2w. The well was drilled and cored to 8312 feet and 5¾-inch casing was cemented at the bottom. At the end of the week the crew was washing the well in.

Shell Petroleum Corporation's Conover 1, 2000 feet southeast of production in Jennings field, Section 40-9s-2w, Acadia

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SHREVEPORT, LOUISIANA

Lake Charles—Houma—Converse
Rodessa—Monroe—Kilgore
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Parish, was fishing for a bit at the end of the week at 7464 feet. The well is holding the attention of operators in this area because a drill stem test showed a gas pressure and distillate. A sand was found at 7340 feet and a drill stem test was made with the seat at 7303 feet. The test showed 250 pounds pressure and a half barrel of 49.3 gravity distillate. The show was in Marginulina formation topped at 7226 feet.

Humble Oil & Refining Company's J. A. Bel 1, which blew out, caught fire and cratered some time ago is reported to be shooting a column of hot salt water in the air. The hot salt water tested around 119 degrees F. J. A. Bel 1, Reeves prospect, Allen Parish, showed oil and gas when it blew out, which indicates that the area has a chance of becoming an oil field. The same operator's J. A. Bel 2, 933 feet north and east of Bel 1, Section 28-6s-7w, Acadia Parish, was drilling in shale at 1600 feet at the end of the week.

Shell Petroleum Corporation's Colonial Sugar Company 1, Convent Prospect, Section 5-12s-5e, St. James Parish, was running geophones every 500 feet to test the salt mass which was discovered the previous week at 7492 feet. The hole was drilled to 7522 feet in salt. Colonial Sugar 1 headed during the past week, flowed mud and showed 100 pounds pressure. The pressure decreased to 15 pounds, and the well continued to flow a small stream of mud.

Continental Oil Company's Fee 1, 1980 feet north of the discovery well, St. Martinville, Section 18-11s-6e, St. Martin Parish, was running tubing to make a production test from 7675 to 7686 feet. The previous week the operators made a drill stem test of this sand which showed 29 thribbles of salt water with a trace of oil. The operators believe the plugs were leaking.

Superior Oil Producing Company has made a new location southeast of production in Bayou Mallet field. Acadia Parish. Goss 1 is in the northeast corner of SW¼ SW¼ of Section 13-7s-1e.

SOUTH LOUISIANA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CAILLOU ISLAND—		
Texas Co., Caillou Island 40	1123	3921
EAST HACKBERRY—		
Gulf, Irwin 20	*	8525
Union Sulphur, Hanzen 6, (wo)	519	5953
DARROW—		
Humble, Community 12	294	5838
ENGLISH BAYOU—		
Fohs Oil Co., Castle 11	450	7068
GILLIS—		
Texas Co., Nickerson Fee 9	540	6752
Bel 1	*	7058
LEEVILLE—		
Texas Co., L. L. E. Leeville 47	*	5246
LOCKPORT—		
Magnolia, Miller 16	79	4750
NEW IBERIA—		
Harry Fotiades, Gulf Land Fee 1	*	3746
Texas Co., Smith 1	528	6685
SULPHUR—		
Union Sulphur, Fee 803, (wo)	600	3418
Fee 828	730	3358
TEPETATE—		
Continental, Homeseekers 3	318	8320
Welsh 2	170	8316
ST. LANDRY PARISH—		
Limited Oil Co., Miller Estate 1, Cankton prospect, sec 47-8s-4e	*	9005
VERMILION PARISH—		
Del Shell Exploration Co., Delcambre 1, Jefferson Island dome, sec 63-12s-5e	*	2704

*Failures; †Junked; ¶Million cu. ft. gas.

Deep Gas Well
COTTON VALLEY TEST MAKES GAS AT RECORD DEPTH

NORTH LOUISIANA

WEEKLY STAFF REPORT

Shreveport. — Logging a saturated formation from 8125 to 8149 feet, almost 1000 feet deeper than any previous test in North Louisiana has ever been drilled before, Ohio Oio Company's R. L. Holloway 6, NE SW 23-21n-10w, Webster Parish, a proposed 10,000-foot test in the old Cotton Valley field, last week tested 25 million cubic feet of wet gas in an eight-minute drill stem test at 8125 to 8147 feet and later was coring ahead below 8200 feet.

While the test has been drilled "tight" and no official identification of the formation has been made it is generally regarded by geologists as the top of the lower marine of the Trinity series. Elevation is 210 feet.

The tester used had a quarter-inch choke on bottom and a three eighths-inch choke on top with working pressure of 300 pounds.

The Cotton Valley field since 1925 has produced wet gas from the Glen Rose at 4500 feet and one well owned by Ohio Oil Company produced a great deal of distillate at that horizon.

One of the deepest tests ever drilled in North Louisiana was in that field, Magnolia Petroleum Company's McCook & Hibbler 1, Section 21-21n-10w, which went to 7002 feet and had a showing of oil at 6946-58 feet. This test was abandoned in January, 1930.

Skidmore and Associates last week made location for Barnette 1, NW SW 29-17n-9w, Webster Parish, Sibley district, where J. P. Evans recently completed a gas-distillate well at 5587 feet in Crichton 1, NE SE 35-18n-9w. Evans' well on recent experiments flowing through chokes varying from one eighth-inch to one half-inch made 113 barrels of distillate and 10 million feet of gas in a 24-hour period. It is producing from the Glen Rose in what corresponds to the Gloyd horizon at Rodessa.

Pyramid Oil & Gas Company's Wheeler A-1, Section 16-18n-16w, Caddo Parish, Blanchard district, after casing was under-reamed last week made another test at 4850 feet that showed salt water. Old total depth is 5210 feet. This is in the Glen Rose, probably corresponding to the Hill at Rodessa.

RODESSA WATER REPORT

Company, Well	Water Percent
McAlester Fuel Company, Tyson 1	2.6
R. W. Norton, Foscue 1, water	0.5
O'Brien Brothers, Rodessa 1	2.4
Pelican Oil & Gasoline Co., Sexton 1	2.1
Sexton 9	3.0
Standard Oil Co., Otwell 1	2.2
Lawton 8	0.3
Caldwell 1	2.2
Caldwell 2	3.5
Caldwell 3	2.4
Pitts A-1	1.5
Pitts A-2	2.0
Pitts B-1	4.0
Pitts B-2	1.5
Zylks 1	16.5
United Gas Pub. Service Co., Gipson 1	30.0
Mitchell 1	30.2
Miller 3	6.2
Poole 1	31.2
Thomas 1	27.0
Tyson 7	2.0
Vaughn Prod. Co., Hunter & Derryberry 1	44.2

RODESSA IS QUIET
Seven completions made and nine new locations

Shreveport.—With reports that United Gas Public Service Company has purchased East Texas Pipe Line Company's Rodessa-Longview eight-inch oil line, which ran the oil produced by Pelican Oil & Gasoline Company on its 120-acre Sexton lease from 13 wells, under a special allowable order that permitted up to 20,000 barrels daily, the problem of over-production and a possible upset of the crude oil price structure appears to have been entirely dissipated insofar as Rodessa is concerned for the present.

The pipe lines now serving the field are owned by companies that desire to maintain an even keel on production and price structure and as long as this situation continues the oil industry need have little worry over Rodessa.

The slackening of activity that was apparent during the flurry about over-production in that field was again reflected, however, last week by a decided drop in the number of new producers on the Louisiana side. In fact the entire field in both Cass County and Caddo Parish added only seven new wells. There are at present 53 drilling operations in Rodessa and eight other tests rigging.

The seven new producers gave the field a total of 210 oil wells. The daily average from 208 wells on June 8 was 58,255 barrels.

There were nine new locations announced in Rodessa last week, of which two were in Cass County. These were United Production Corporation's Cunningham 2, Wilson Robinson Survey, and E. Tyson Unit 2, J. H. Rives Survey. The seven in Caddo Parish were: United Gas Public Service Company's Rodessa 23, Section 23-23n-16w, and Spearman 4, NW NW 18-23n-15w; Phillips Petroleum Company's Smith 1, NW SE 8-23n-15w; Adams 3, Section 17-23n-15w; and Norton 6, Section 18-23n-15w; H. W. Snowden's Phillips 8, Section 23-23n-16w, a townsite location; and Maurice Roger's

Rockefeller 1, Section 23-23n-16w, a townsite location.

United Production Corporation's Simpson 1, James Young Survey, completed at 6077 feet flowed 35 barrels per hour through half-inch tubing choke is a north offset to The Texas Company's A. S. Hall 1, in the same survey, which was recently completed as a connecting link between the west edge of the field and a four-mile southwest extension. United Production Corporation's offset producer had tubing pressure and casing pressure each of 150 pounds. Top of saturation was 6052 and base saturation 6072 feet. Top of anhydrite was 5141 feet with massive from 5407 to 5657 feet; elevation is 199 feet.

Another Cass County producer completed was American Liberty Oil Company's Maxie 4, John Collum Survey, flowing 40 barrels per hour through half-inch tubing choke at 6006 feet.

United Gas Public Service Company completed a south edge producer in Brewer 4, NW NW 29-23n-16w, flowing 58 barrels per hour through quarter-inch tubing choke with tubing pressure 210 pounds and casing pressure, 600 pounds. Mar and Perkins completed Peak 2, SW SE 11-23n-16w, a north edge well, flowing 23 barrels of oil per hour through 15/32-inch tubing choke with tubing pressure 265 pounds and casing pressure, 300 pounds, at 6047 feet. United's McCoy 1, NE NE 16-23n-16w, a south offset to a one-mile northwest edge producer, was treated with 2000 gallons of acid and flowed eight barrels of oil per hour through one half-inch tubing choke. Total depth is 5989 feet. Delta-Jones also resorted to 1000 gallons of acid to complete Gipson 1, Section 13-23n-16w, completed at 6065 feet flowing 52 barrels per hour through three quarter-inch tubing choke. United's Harris 2, NE NE 15-23n-16w, was completed at 6007 feet flowing 21 barrels per hour through half-inch tubing choke.

Standard Oil Company's Zylks 1, SE SE 9-23n-16w, west outpost of the northwest part of the Caddo side of Rodessa, which was plugged back to 5990 feet and gauged 581 barrels in 24 hours through quarter-inch tubing choke with 16.5 percent water, logged top of Young at 5995 feet and top of the Dees at 5979 feet.

NORTH LOUISIANA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO PARISH—		
W. K. Henderson et al, Fee 1, 5-19n-15	*	2436
Press & Lambert, Self 1, 10-20-15	200	2205
CADDO PARISH—(Rodessa)—		
Delta-Jones, Gipson 1, 13-23n-16w	2000	6065
Marr et al, Peak 2, 11-23n-16w	2000	6047
United Gas Pub. Serv. Co., Harris 2, 15-23n-16w	1500	6007
Brewer 4, 29-23n-16w	2000	6030
McCoy 1, 16-23n-16w	500	5989
CASS COUNTY, TEXAS—(Rodessa)—		
American Liberty Oil Co., Maxie 4, Jno. Collum sur	2000	6006
United Prod. Corp., Simpson 1, Jas. Young sur	2000	6077
MOREHOUSE PARISH—(Monroe)—		
United Gas Pub. Serv. Co., Tensas Delta Lbr. Co. 22, 4-21n-4e	¶7½	2175
RAPIDES PARISH—(Cheneyville)—		
Texas Eagle Oil Corp., State 1, 47-1s-2e	*	5758
RED RIVER PARISH—		
I. J. Allen, Franklin Realty Co. 1, 20-11n-9w	*	3190
SABINE PARISH—(Zwolle)—		
Ellis Prod. Co., Williams 1, 23-7n-11w	*	2806
SABINE PARISH—(Converse)—		
W. E. Hall et al, Aaron 1, 32-9n-13w	*	2090

*Failures; †Junked; ¶Million cu. ft. gas.

GEOPHYSICAL PLAY
Is generated by Phillips wildcat at Snow Hill

WEEKLY STAFF REPORT

El Dorado.—A geophysical exploration campaign that approximates in size the one that developed along the southwest trend of the Rodessa fault in the weeks immediately following discovery of oil at Rodessa is developing in southeast Arkansas and northeast Louisiana as a result of the Permian lime gas-distillate well completed several weeks ago by Phillips Petroleum Company at Snow Hill, Section 27-15-15, Ouachita County, Arkansas. There is this outstanding exception, however, in that the Snow Hill trend exploration will be to a large extent in the holdings of large lumber companies, whereas in Cass and Marion Counties, Texas, the land-owners for the most part had comparatively small tracts.

Phillips Petroleum Company is reported to have taken Joe Modisett and associates' geophysical option on 256,000 acres of land in Ashley and Union Counties, Arkansas, and in Union and Morehouse Parishes, Louisiana, that Modisett recently secured from Frost Lumber Industries. Phillips, Gulf Oil Corporation, Tidewater Oil Company, and H. L. Hunt, Incorporated, continue active leasing in Morehouse Parish. Phillips is also leasing in Ashley and Bradley Counties, Arkansas, between its block centering in Section 12-17-11, Bradley County, where it is drilling a test, and another block that centers in Section 6-17-9.

Besides the Permian lime trend play southeast of Snow Hill, there has also been a flurry of leasing around Fouke, Miller County, in the southwest part of Arkansas, about 15 to 20 miles north of Rodessa. Standard Oil Company of Louisiana for several weeks has had a geophysical party in south Miller County, and last week started buying leases in townships 17, ranges 27 and 28. J. K. Wadley, who owns a block east of Fouke has given Sinclair-Prairie Oil Company a geophysical option and has also increased his holdings. Root Petroleum Company has also acquired some protection acreage as have a number of individuals. Benedum & Trees' seismograph unit is working around the flanks of the old Stephens shallow field in Ouachita County. This firm drilled a test in that area a few months ago.

Among the geophysical parties working in the southeast trend from Snow Hill, Ouachita County, are those of Lion Oil Refining Company and Root Petroleum Company. The latter's party recently worked around H. L. Hunt's E. F. Gregory 15, Section 10-17-14, Rainbow City field, Union County, that was drilled to 6911 feet.

The exploration trend from Snow Hill has also reached into West Carroll Parish as well as into Ouachita, Morehouse, Union Counties and Richland Parishes. Phillips Petroleum Company is reported to have secured a geophysical option on 46,000 acres of land owned by Pioneer Cooperage Company in West Carroll Parish. Zeke Lohman recently assembled a 6000-acre block in that parish for a deep test.

GAS-OIL RATIO
High in American Liberty Rodessa extension test

Shreveport.—On the Texas side of the Rodessa oil field in Cass County, the highest oil-gas ratio found so far by the Texas Railroad Commission was in American Liberty Oil Company's Rambo 1, J. H. Rives Survey, which showed a ratio of 16,310 cubic feet of gas per barrel of oil. This well on a recent gauge produced 43 barrels of oil in a day. The larger the choke used, the less oil is produced from Rambo 1, it is said. Other Cass County wells on which the ratio was taken showed the following: United Production Corporation's Stewart Unit 1, John Collum Survey, 445 barrels through quarter-inch positive choke in 24 hours; oil-gas ratio, 950 cubic feet per barrel; the same company's Eva Fields 1, John Collum Survey, 412.5 barrels in 24 hours through quarter-inch positive choke; oil-gas ratio, 823 cubic feet per barrel of oil.

The recent proration order for June set the per well allowable at 275 barrels per day, contingent upon each well's oil-gas ratio not exceeding 2000 cubic feet to one barrel of oil. A well having a larger ratio will be regulated under the displacement allowance and its oil yield will not aggregate 275 barrels daily.

Six geophysical crews continue to work in East Texas border counties. In Marion County, two miles northwest of Jefferson, Atlantic Oil Producing Company has a seismograph unit at work, and four miles southwest of the same town it has a torsion balance unit at work. Sinclair-Prairie Oil Company has a seismograph unit working around the J. Watkins Survey, north of Jefferson, and Pure Oil Company has a seismograph unit northeast of Daingerfield. In Panola County, Shell Petroleum Corporation's geophysical party is shooting between Carthage and Bethany.

Stanolind Oil & Gas Company has been buying scattered leases in northern Panola County and in Shelby County near Joaquin. Marathon Oil Company is buying royalties in Shelby County in the vicinity of a block held by Pure Oil Company near Joaquin.

MISSISSIPPI START

Jackson.—H. T. Salter of Chicago has made location and erected derrick for Carpenter 1 in Section 5-21-7e, Grenada County, Mississippi. The test will go through the Cretaceous to the Paleozoic. S. C. Wilson, geologist, of Memphis, Tennessee, is in charge of drilling operations.

ARKANSAS
Completions

Company, Well and Location	Bbls. Init. Prod.	Depth
CLARK COUNTY—		
B. Tribinoff, Tr., Gibbons 1, 27-8-18	*	557
FRANKLIN COUNTY—		
Ozark Nat. Gas Co., Barton-McDonald 1, 12-8n-29w	*	2558
MILLER COUNTY—		
M. L. Luckett et al, H. Beck 1, 34-15-26	*	2946

*Failures; †Junked; ¶Million cu. ft. gas.

30 Tests Planned

MONUMENT AND EUNICE CALL FOR MOST OF DRILLING

WEEKLY STAFF REPORT

Hobbs, New Mexico.—Lea County added 30 new tests within the past two weeks, with the Monument and Eunice fields receiving 12 each. Locations have been made for three new tests near Jal and in the sandy-lime belt, while considerable new work is in the offing in the sandy-lime area to the north and south of Eunice. The enlarged drilling program also includes wildcats to be drilled in the west portion of the county, and near Lovington.

Magnolia Petroleum Company is launching its first wildcat in Lea County, having made location for Scharbauer & Eidson 1, C NW NE 29-16s-35e, about eight miles southwest of Lovington and five miles northeast of Magnolia Petroleum Company's (was Vacuum Oil Company) State 1, which was completed as a pumper at 4900 feet in August, 1929, but has not been operated due to its isolation from a market. Humble Oil & Refining Company and Ohio Oil Company have protection acreage in close vicinity of the new location, which is contracted to 5000 feet. Culberson, Erwin et al have moved in a rig to drill J. S. Eaves 1, C SW NW 18-21s-36e, situated in the west portion of the county and near previously drilled failures that revealed favorable structural conditions, but were void of production.

The sandy-lime horizon to the east of Jal is proving to be somewhat of a nightmare for geologists due to the irregularities found in the gas and oil horizon. A majority of the tests that have drilled to a decisive depth have been disappointing. The Texas Company's W. T. Lanehart 1, C NE 29-25s-37e, extended production about one mile to the southwest when it tested one barrel oil per hour at 3308 feet, or 277 feet sub sea, and late last week was awaiting results of treatment with 4000 gallons of acid. Repollo Oil Company's J. T. Lanehart 1, SE NW NW 28-25s-37e, or about one-half mile east by north of the above test, occupies the highest structural position in the general area, but missed the 75,000,000 feet of dry gas production that delayed progress on The Texas Company's well for several weeks at the 2770-foot level. Repollo Oil Company logged base of salt at 2240 feet, or 788 feet above sea level, being 92 feet higher structurally than the well that hit the big gas flow. Sun Oil Company's B. T. Lanehart 1, C SE SE 20-25s-37e, logged salt series at 1145-2510 feet, and was drilling below 2700 feet. When correlated on base of salt, widely used geological marker, the latter is found to be 258 feet lower structurally than Repollo Oil Company's Lanehart 1, which has cemented casing at 3292 feet.

Humble Oil & Refining Company's J. T. Lanehart 1, C NE SW 21-25s-37e, sprayed eight barrels oil in three hours, with dry gas production rated at 12,000,000 feet daily, while drilling at 3280 feet, or 212 feet sub sea. The same company's Grace B. Hadfield 1, an east offset, flowed 216 barrels oil in 22 hours on completion gauge at 3201 feet, or 119 feet sub sea. The latter is a south offset to Harry W. Leonard et al's Lanehart 1, which is flowing 30 barrels daily from pay at 2991-3007 feet. Leonard has moved in equipment to drill Lanehart 2, C SE NW 21-25s-37e. Jal Natural Gas Company has made location for C. T. Bates-Humble 1, C NE SW 20-25s-37e. It is on a 160-acre lease farmed out by Humble Oil & Refining Company, and lease contract calls for production by July 9. The Texas Company is rigging up to drill E. D. Fanning 1, C SE NE 4-24s-37e, a west offset to Crafton Oil Company's G. H. Mattix 1, which is making 20 barrels daily.

The last group of tests drilled to the sandy-lime pay in the South Eunice area failed to yield production of any consequence, and offset lease owners have been reluctant to drill wells that will not make their proration quota, which now amounts to 100 barrels daily. Landreth Production Corporation's Grizzell 1, C SE SW 5-22s-37e, an intermediate test for sandy lime production to the north and south of Eunice, was drilling below 3200 feet, with an elevation of 3437 feet. Ohio Oil Company's W. H. Turner 1, C NE SE 29-21s-37e, south offset to the discovery well of the north Eunice area, logged 90 feet of broken pay in drilling to 3800 feet, of 323 feet sub sea. The formation has since been treated with 3000 gallons of acid after swabbing two barrels oil per hour. Magnolia Petroleum Company's Carson 1, an east offset, was drilling below 2800 feet, having logged top of lime at 2700 feet, with an elevation of 3463 feet. C. & G. Oil Company and The Texas Company's Weir 1, C NE NE 14-20s-37e, recent wildcat strike in sandy-lime belt on east flank of the Monument dolomite lime area, has moved in spudder to clean out and deepen from 3893 feet since production has declined to five barrels daily. It was treated with 2500 gallons of acid. The Texas Company's E. L. Alexander 1, C NW SW 7-21s-37e, most northerly prospect in the sandy-lime belt has drilled to 3720 feet.

New Line Operating

Gulf Refining Company, pipe line division, began operating early in June, its eight-inch crude line that links several Lea County areas with the company's West Texas trunk line system. The line was built early this year and scheduled to handle its first oil on April 1, but arrangements were made for Shell Petroleum Corporation to buy 5500 barrels daily over the remainder of the year. At present the line is only handling the 1667-barrel allowable held by Gulf Oil Corporation in the Monument field, which is prorated to 10,892 barrels daily with The Texas Pipe Line Company absorbing the balance of the production.

Gulf Oil Corporation contributed 11 of the new locations credited to the Monument and Eunice fields within the past two weeks. These were forced offsets within the proved area. This company's S. T. Burk 1, C NE NE 28-19s-37e, situated on a short term lease about three-quarters of a mile east of production, showed only a trace of oil and gas when originally tested at 3930 feet, and failed to produce when deepened to 3971 feet, or 369 feet sub sea. It is considered eliminated as a probable producer. Gulf Oil Corporation's B. V. Culp 7, C NE NE 19-19s-37e, situated in the extreme northeast portion of the Monument field, is listed among the recent completions, having gauged 115 barrels per hour natural flow through open tubing from lime at 4005 feet. Continental Oil Company has started operations on State 1-A-17, C SW SW 17-19s-37e, a northeast diagonal offset.

Repollo Oil Company's J. R. Phillips 1-B, NE NE NW 31-19s-37e, registered a high initial yield for the mid-section of the Monument field in gauging 132 barrels oil during first hour and 110 barrels average for the next four hours through three quarter-inch tubing choke. It was treated with 2000 gallons of acid, with the hole bottomed at 3925 feet, or 317 feet below sea level.

New development work authorized for the Eunice field during the past two weeks centered mostly on the east flank of the structure, with the north and northwest borders also sharing in five locations. Completion of Landreth Production Corporation and Ohio Fuel Supply Company's State 1-E, C SW NW 22-21s-36e, with a natural flow rated at 3750 barrels daily from lime pay topped at 3820 feet with an elevation of 3618 feet will require a number of progressive offsets.

NEW MEXICO

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
LEA COUNTY—(Eunice Field)—		
Gulf Oil Corp., State-Janda 1-C, c nw sw 15-21s-36e	335	3892
Conoco-California Co., A. M. Lockhart 1-B-14, c sw nw 14-21s-36e	2500	3870
Humble, A. J. Adkins 5, c se sw 10-21s-36e	1000	3865
Landreth Prod. Corp.-Ohio Fuel Supply Co., State 1-E, c nw nw 22-21s-36e	4000	3900
LEA COUNTY—(South Eunice Field)—		
Sun Oil Co., A. D. Richards 1, c ne se 6-23s-37e	35	3798
LEA COUNTY—(Maljamar Field)—		
Maljamar O&G Corp., Baish 6, c nw se 21-17s-32e	150	4129
LEA COUNTY—(Monument Field)—		
Empire O&R Co., State 2-E, se se sw 30-19s-37e	1000	3933
Gulf Oil Corp., B. V. Culp 7, c ne ne 19-19s-37e	5000	4005
Repollo Oil Co., J. R. Phillips 1-B, ne ne nw 31-19s-37e	6000	3925
Sun Oil Co., State 1, c ne ne 25-19s-36e	1500	3988
LEA COUNTY—(East Jal Field)—		
Humble, G. B. Hadfield 1, c nw se 21-25s-37e	250	3201
LEA COUNTY—(Wildcats)—		
Liberty Oil & Drl. Co., J. W. Hair-Repollo 1, sw sw se 24-24s-37e	*	3702
Plains Prod. Co., Geo. Smith-Humble 1, c se se 4-25s-37e	*	3750

*Failures; †Junked; ¶Million cu. ft. gas.

WATCH BEAVER TEST

Well plugging back after finding bottom water

ROCKY MOUNTAIN FIELDS

WEEKLY STAFF REPORT

Casper, Wyo.—After cementing back 30 feet from 6797 feet to shut off what operators believed was bottom-hole water, Montana Dakota Utilities Company's Unit 1, NE NE NW 17-4n-62w, on Little Beaver dome, Fallon County, eastern Montana, is replugging this week as the well, when tested, still showed water. The company is recementing 35 feet from the bottom hole.

When Unit 1 is allowed to flow open it makes around 80 percent water, but through the casing with valve scarcely cracked after being shut in 25 hours well flowed 28 barrels per hour of clean oil.

The well flowed 3300 barrels of fluid daily through the 2½-inch tubing with perforations at 6789 feet on first testing after injection of 2000 gallons of acid. On a later test the well flowed 7650 barrels of fluid daily on a half-hour test through the tubing and casing. Saturation is topped at 6747 feet with the 6⅝-inch casing set at 5739 feet.

The test is on the Little Beaver Dome, superimposed structure on Baker-Glendive, which is 96 miles in length and has an average width of 6 miles and a closure of 500 feet. If commercial production is developed from this test it will mean another black oil reserve for Montana which has only one other important black oil reserve, that of the Pondera field.

Four producers and one dry hole were completed in the Cut Bank field, Glacier County, northern Montana, as one new well started. Best completion of the week was The Texas Company's Morrison 6, NE NE 22-35n-6w, which swabbed 138 barrels oil in first 9 hours at 3003 feet.

R. C. Tarrant's Miller 5, NE NE 24-34n-6w, swabbed 110 barrels in the first 9 hours at 2811 feet. Oil rose 1400 feet in the hole. Operators shot the well with nitro glycerin which made it flow 130 barrels the first 24 hours after shot.

R. C. Jeffries' Lukens 4, NE NE 12-33n-6w, swabbed 160 barrels initial. Fluid rose 1100 feet in the hole before swabbing started. Well will be acidized.

Dakota-Montana Oil Company's Winkler 4, NW NW 26-35n-6w, swabbed 99 barrels in the first 24 hours at 2885 feet. Fluid rose 1400 feet in hole. It had the Cut Bank sand at 2850-2860 feet and the Ellis at 2885 feet.

Goodman Oil Company (R. E. Lee) Tribal 129 No. 1, nw¼ sw¼ 25-33n-6w, was plugged and abandoned at 3240 feet. Sulphur water was encountered in the Ellis-Madison at 3140 feet.

Montana Power Gas Company's Winkler 1, CSE SE 28-33n-5w, is a new location.

Two new wells started this week in the Pondera field, Pondera County, northern Montana, as one nears completion. Warren Hastings' Erickson 2, NW SW NW 10-27n-4w, is pumping 12½ barrels oil in 8 hours with some water. Total depth is at 1990 feet.

Jones-Chambers released location for Erickson 1, SW SE SW 3-27n-4w, and Warren Hastings' Erickson 3, CNW SE SW 10-27n-4w, is a location. Wm. Fulton's Price 1, SW NE NE 18-27n-4w, in the same field, is drilling at 1380 feet.

Two wells were started in the Lance Creek field, Niobara County, eastern Wyoming this week, as a well nears the critical depth. The Ohio Oil Company's Carrie Putnam 5, C NW SW 33-36n-65w, has rig up. Same company's Lamb 8 Account 2, C SW NE 5-35n-65w, is drilling at 3216 feet.

Continental Oil Company started a well to the Sundance in the Lance Creek field. Operators are waiting on cement to set around the 12½-inch casing at 235 feet in Schuricht 1-B, 90 feet east of the C NW SE 6-35n-65w. The company's Jose 4, C SW NE 6-35n-65w, is nearing critical depth and is coring at 3823 feet.

Continental Oil Company's Apex 3 Account 2, SE NW 34-36n-65w, one mile east of the nearest Sundance producer at Lance Creek, is drilling at 3362 feet. The well had top of the Dakota at 3335 feet.

A deep test on Wertz Dome gas field was started last week by Sinclair Wyoming Oil Company. The well is Wertz 10-A, SW NW 7-26n-89w.

Ohio Oil Company is rigging up pumping equipment for production test of its Alvy Dixon 1, NEc SE 34-20n-78w, in the Rock River field, Carbon County. Operators plugged back 30 feet from 3314 feet to shut off bottom hole water in the Sundance sand. Top of the Sundance was at 3255 feet.

In the same field, Ohio Oil Company's Alvy Dixon 4, SEc 34-20n-78w, is drilling at 3566 feet. The well is an old Dakota producer deepening from 3243 feet. This company's Diamond Cattle Company, 35-20n-78w, is drilling at 145 feet after setting the 12½-inch surface casing at 123 feet.

Joint with The California Company, Ohio Oil Company's operations on Big Medicine Bow Dome, Carbon County, report as follows: Union Pacific 2, C NE NE 35-21n-79w, is drilling 5064 feet and Union Pacific 3, C NE SE 23-21n-79w, is drilling at 4543 feet.

In the Dutton Creek field, Sidney H. Keoughan and Union Oil Company's Union Pacific 20-X, 1800 feet from the east and 1320 feet from the south lines of 1-18n-78w, is drilling at 4706 feet. Muddy formation is expected at 4800 feet.

The Ohio Oil Company has a well near completion and is starting another in the northern Wyoming oil fields, where other operations are at routine stages. Ohio's Bryon-Union 4, C SW NE 25-56n-97w, in the Byron field, Big Horn County, swabbed 192 barrels initial after treatment of 2000 gallons of acid in the Embar lime at 5587-5700 feet. Operators are rigging up pumping equipment. The well went out of the Embar at 5714 feet and drilled to 5735 feet, total depth, where it developed bottom hole water, and was plugged back.

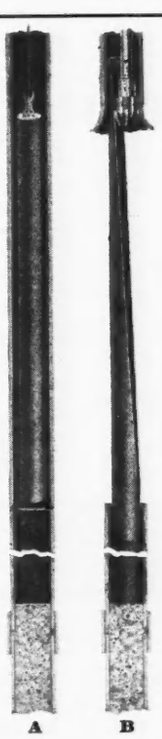
The Ohio Oil Company's State Land 1, NEc Lot 38, (northwest corner) 36-56n-

MOUNTAIN STATES

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTANA		
GLACIER COUNTY—(Cut Bank Field)—		
Nadeau Bros., Farmers State Bank 3, csw ne 17-33n-5w	150	
Montana Power Gas Co., Corrigeaux, ne nw 28-33n-6w	75	2980
R. C. Tarrant, Britton 6, sw sw 12-34n-6w	45	2845
COLORADO		
ARCHULETA COUNTY—(Price Pool)—		
Wm. E. Hughes Estate Fee 6, nw ne se 24-33n-2e	1148	
WYOMING		
ALBANY COUNTY—(Quealy Dome)—		
California Co., Holst 3, ne sw se 13-17n-77w	*	3420
NIOBRARA COUNTY—(Lance Creek Field)—		
Continental Oil Co., Agnes Rohlff 6, csw sw 32-33n-65w	1800	3819

*Failures; †Junked; ¶Million cu. ft. gas.



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97w, in the Byron field, is moving in material. The company's Robert Till 1, C SE SW 24-56n-97w, is drilling at 4678 feet while Orson Vail 1, C NW NE 23-56n-97w, is drilling at 1616 feet.

Sidney H. Keoughan and Taylor Oil Company has rigged Robinson 1, NE NE 24-56n-97w, in the Bryon field, and is ready to spud.

On the south fault block of Garland anticline, Big Horn County, Peay Oil Company (Crosby and Huntington) is running the 6¼-inch casing in Denio Mining Company 1, C NE NE NE 15-56n-97w. The hole bottoms at 3900 feet.

Stock Oil Company's Allen 1-X, directional hole to kill gasser on Garland anticline, is drilling at 1505 feet. Well is 420 feet due east of Allen 1, SE NW SE 35-56n-97w, which is flowing an estimated 60,000,000 cubic feet of gas daily from the Embar-Tensleep at 3815 feet. Total depth is at 3838 feet. Same operators are waiting on cement to set in Yates 1, center of the south line SW NE 35-56-97w, around the 8⅞-inch casing with hole bottomed at 2522 feet.

Sinclair-Wyoming Oil Company's Muskrat 2-C, NE SW SW 1-33n-92w, 3 miles west of the discovery well on Muskrat Dome, and on a separate fault block, Fremont County, is drilling at 3493 feet.

In the Grass Creek field, Hot prings County, The Ohio Oil Company's Mill Iron Cattle Company 73, NE SW 19-46n-97w, is drilling at 3480 feet.

NEW LEASING ACT
Wyoming regulations are made more liberal

Cheyenne, Wyo.—With a view towards stimulating development of oil and gas in state lands, the Wyoming Board of Land Commissioners liberalized leasing regulations in three instances in the new rules drawn up at a board meeting here June 5.

The changes include the lengthening of the term of leases to 10 years, allowing an individual or company to hold as many leases as he wishes, and doubling the maximum acreage embraced in a state lease from one section to two sections of land.

Under the old regulations leases on wildcat state lands had a tenure to the lessee of only 1 year and on developed lands of only 5 years. In most instances these leases were released to the original lessee. An individual or company was limited to holding one state lease only. Amount of acreage in a state lease was 640 acres.

The new leases drawn up under the regulations call for the drilling of a well within 2 years after signing the lease. Regulations call for the payment of 25 cents per acre annual rental until a discovery is made, and requires the payment of $10 for recording fee, $10 for a bond on undeveloped lands, and a $1 filing fee.

Upon approval by the land board a lease may be relinquished on 60 days filing of notice by the lessee. Royalty for the first period of the lease is fixed at 12½ percent, and at a minimum of 5 percent to the state with a discretionary maximum set by the state when the land may be released following the expiration of a 10-year period. On undeveloped lands, priority filings are given first consideration, and undeveloped lands are leased at auction.

New Field Found

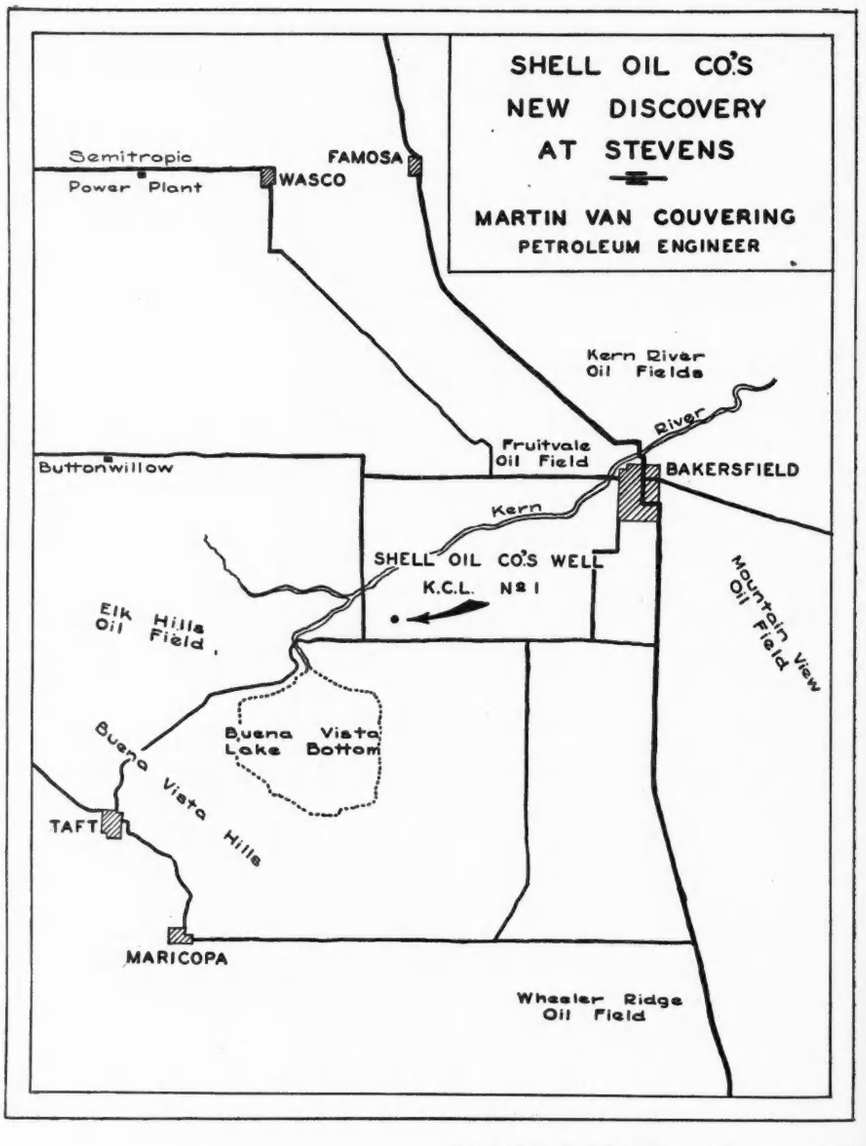
KERN COUNTY POOL SAID TO RESEMBLE KETTLEMAN

WEEKLY STAFF REPORT

Los Angeles.—A new field, said to resemble Kettleman Hills in initial performance, was added to Kern County last week when Shell Oil Company's K. C. L. 1, Section 29-30s-26e, was completed at 7888 feet for 1100 barrels of 61.4 gravity oil and 16 million cubic feet of gas daily through an inch choke. The gas runs 1.4 gallons per thousand cubic feet. The new field, as yet of undetermined importance, is located on the floor of San Joaquin Valley about midway between Taft and Bakersfield.

Initial tubing pressure was 1900 pounds while the casing pressure on K.C.L. 1 built up to 2200 pounds after the well had been choked back to 744 barrels a day through a 34/64-inch bean. Casing was set at 7800 feet. Prior to the production test, 110 feet of hard rubber liner, including 92 feet of perforated, was landed on bottom.

It is the general opinion that only the top of the high gas pressure sand has



been tapped, making the production of the new well very similar to the production from the first wells at Kettleman Hills before the high gas pressure sands were cemented off. It is felt that deeper drilling into the lower oil zones, will furnish better wells with a lower gravity oil.

Shell Oil Company has under lease approximately 4000 acres, and the Ohio Oil Company controls some acreage in the same general area. Since the adjoining acreage in the vicinity is held in large tracts, a major drilling campaign is not expected. Other wells will be drilled, but they will be widely spaced and the drilling activities will be orderly.

Odd Structural Condition

K. C. L. 1 is reported producing from brown shale (Santa Margarita — Upper Miocene) which, if true, requires the hypothesis of a very unusual structural condition and geologic history. Compared with the normal geologic section as cored in Standard Oil Company's K. C. L. 1-27, deep test in the Elk Hills field seven miles west, and in other wells on the west side of the San Joaquin Valley, this well has found the interval between the Mulinia marker horizon and the top of the Miocene to be some 2000 feet thinner than the normal 5000 feet. This condition is complicated by the belief, held generally, that the formation should be expected to thicken toward the center of the San Joaquin Valley which is known to be geosynclinal in character.

Shell Oil Company's K. C. L. 1, was located entirely on data gathered through geophysical exploration. Interpretation of these data indicate an anticlinal or domed structure it is said, absolutely no evidence of structure is reflected in the surface topography on the floor of the valley, which is a condition unusual in California. The well is located 175 feet south and 900 feet east from the southwest corner of the section and about seven miles east from Elk Hills, the nearest producing field, and ten miles southwest from Fruitvale, the second nearest producing field.

About five miles north of the Shell wildcat, in Section 1-30s-26e, Ohio Oil Company's K. C. L. D-1 is being cored ahead at 8139 feet. This well has encountered no encouraging showings, although unconfirmed reports about two weeks ago were that it was correlating more than 100 feet higher than Shell Oil Company's K. C. L. 1.

In North Belridge field, Continental Oil Company's Result 7 was completed May 31, flowing 1050 barrels in 10 hours of 29.5 gravity oil, cutting 3.8 percent through a 40/64-inch bean, with tubing and casing pressures of 1800 pounds and 1000 pounds, respectively. During a 24-hour flow test ending June 4, the well produced 4374 barrels of 29.9 gravity oil cutting 0.2 percent, and 4,000,000 cubic feet of gas through a 96/64-inch bean, with tubing and casing pressures of 200 pounds and 1300 pounds respectively. This production is from the lower Wagon Wheel zone of Oligocene (?) age. The well is 8520 feet deep, with 7-inch casing cemented at 7985 feet, 552 feet of 5¾-inch liner, including 330 feet perforated, landed at 8520 feet and cemented through perforations at 8184 feet, and 2½-inch tubing hung at 6612 feet. The location is 330 feet north and 1650 feet east from the southwest corner of Section 36-27s-20e.

Core Testing for Structure

Hogan Petroleum Company is drilling a series of core holes for correlation purposes on the McNally ranch, west of and adjacent to West Coyote oil fields. The property covered by this deal comprises 2400 acres and includes Sections 15, 22 and 23, and part of Sections 10-3s-11w. A north-south line and an east-west line of core holes will be drilled, the former transversely crossing the projected axis of the West Coyote structure. In the event this project discloses a geologic structure on the property considered favorable to oil accumulation, a deep test well will be drilled immediately. It is the advance belief of the operators that the West Coyote structure may possibly possess an offset subsidiary fold similar to that of the East Coyote oil field.

Chanslor - Canfield - Midway Oil Company's Del Amo 23, deep test well in Section 16-4s-14w of the Torrance field, is still wet after both recementing the 7-inch casing and plugging bottom, and the water witch is again being run to determine the point of water entry. This well is a test of the schist-bearing conglomerate zone (basal Modelo-upper Miocene) which fills in the lower parts of the eroded schist (Franciscan-Jurassic) surface underlying the west edge of the Los Angeles Basin. The tops of the conglomerate and of the schist were cored at 4740 feet and at 4837 feet, respectively, and the well penetrated into the schist 50 feet to 4887 feet. Del Amo 23 is plugged to 4854 feet and the 7-inch casing is cemented at 4740 feet.

In Playa del Rey field, Eastern Oil Company's Eastern 1, semi-wildcat well in Section 22-2s-15w, is standing cemented with the 7-inch casing set at 7295 feet. At the time the casing was run circulation could not be established, rendering a normal cementing operation impossible. The float collar was drilled out in the hope of thus eliminating the obstruction, and a

CALIFORNIA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTEBELLO—		
Standard, Baldwin 79	30	6450
Baldwin 81	240	3950
REDONDO—		
Dumas-Brown, Dumas-Brown 1	400	3515
Lawler Pet. Co. No. 1	150	3518
Redondo Oil Co., Security 1	180	3634
Tu-Jax Oil Co., No. 1	190	3736
Walken Oil Co., No. 1	450	3618
RICHFIELD—		
Union, Chapman 29	295	3639
SANTA FE SPRINGS—		
Union, Santa Fe 45A	*	3545
KETTLEMAN HILLS—		
Standard, No. 21-19J	825	8912
NORTH BELRIDGE—		
Continental, Result 7	4375	8520
EDISON—		
Buffalo Oil Co., Wildman 1	100	1180
FRUITVALE—		
Western Gulf, Red Ribbon 2	225	3807
KERN FRONT—		
Republic Pet. Co., Strassburger 10	260	1997
Standard, No. 26	115	2175
McKITTRICK—		
Welport Oil Co., No. 14	¶4	1572
MT. POSO—		
General Pet. Corp., Heisen 13	100	1583
MIDWAY-SUNSET—		
General Pet. Corp. Main Line 2	120	2890
Gibson Oil Co., O'Brien 3	1400	2855
Standard, No. 31E-30	45	3529
MOUNTAIN VIEW—		
Mohawk Pet. Co., Hood 9	300	6074
Clendenen 7	70	6050
ROUND MOUNTAIN—		
Honolulu Oil Corp., No. 20-1	360	1903
STEVENS—		
Shell, K. C. L. 1	1100	7888
DOS PALOS—		
Pure Oil Co., Chowchilla 3	¶10	2709
ELWOOD—		
Signal Oil & Gas Co., No. 5	305	3725
MESA—		
Anacopa Oil Co., Low 4	350	2060
EDISON—		
J. E. O'Donnell, Jeppi 1	*	3940
KERN FRONT—		
Republic Pet. Co., Crosby 1	*	1839
MOUNTAIN VIEW—		
Barnsdall Oil Co., Noble 1	*	6185
FRESNO COUNTY—		
Standard, So. Coalinga 1	*	2165
DEVIL'S DEN—		
Richfield Oil Co., Alferitz 2	*	3500

*Failures; †Junked; ¶Million cu. ft. gas.

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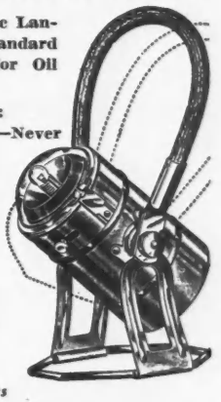

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tester was then run and the valve opened in an unsuccessful attempt to establish circulation backward. Sixty sacks of cement were pumped into the hole and pressure applied in order to fill any channels that may have been opened-up behind the casing by the tester, although it appeared that an effective shutoff had been accomplished without the use of cement. Production is expected here also from the basal Modelo conglomerate overlying the eroded Franciscan schist.

General Petroleum Corporation's wildcat test on Terminal Island, within a few hundred yards of the harbor and located on city owned land, is flowing seven barrels an hour of 13 gravity oil from depth of 2694 feet with 11¾-inch casing cemented at 2450 feet. It is expected the hole will be drilled deeper in search for deeper and better sands.

MICHIGAN

WEEKLY STAFF REPORT

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARENAC COUNTY—		
Ernest Snyder's Clukey 1, 20n-6e, se se sw-8	*	3130
GLADWIN COUNTY—		
T. F. Caldwell, Inc.'s Parker 1, 18n-2w, se se se-21	*	4111
GRATIOT COUNTY—		
McPherson & Co.'s Sharrar 1, 11n-4w, ne sw sw-11	*	3368
ISABELLA COUNTY—		
Geo. Hanner's Dargitz 1, 13n-6w, sec 20	*	3490
LAPEER COUNTY—		
Co-op Oil Co.'s Hartrick 1, 8n-9e, nw nw sw-13	*	2665
MECOSTA COUNTY—		
Mitchell O&G Co.'s Mitchell 1, 13n-10w, c nw ne-27	¶1	1240
Columbia O&G Co.'s Arnett 2, 13n-8w, c se se-23	¶16	1316
MIDLAND COUNTY—		
Pure Oil Co.'s Ward 5, 14n-2w, se sw se-7	25	3574
Naramore 23, 13n-1w, se sw nw-15	150	3416
Bond c-2, 13n-2w, se se-1	130	3442
Reed-Alspaugh 2, 13n-2w, nw se-2	150	3436
Root D-3, 13n-2w, ne se-2	1000	3437
Rex Oil Co.'s Lyon 1, 13n-1w, sw se ne-23	50	2965
MONTCALM COUNTY—		
John Marchrio's Whitcomb 1, 12n-7w, ne ne nw-7	*	3540
Hyatt & Norton's Bellows 2, 12n-7w, c se sw-10	¶56	1300
Rowmor Oil Corp.'s Lamphier 2, 10n-5w, nw sw ne-2	160	3176
T. F. Caldwell, Inc.'s Pugsley 2, 11n-5w, c se nw-36	¶7½	1018
Burnstein Oil Co.'s Keel 7, 11n-5w, se ne se-35	20	3197
Pure Oil Co.'s Mangus B-1, 11n-5w, se se sw-36	360	3188
Jetter Oil Co.'s McCracken 1, 9n-5w, nw se se-6	*	3160
Durham & Jones' Towle 1, 11n-8w, se se nw-15	*	3331
Wolverine Nat. Gas Co.'s Richardson 1, 12n-7w, c sw ne-3	¶39	1301
Fletcher & Leyman's Eccles 1, 12n-7w, c ne se-4	¶67½	1303
Eccles 2, 12n-7w, c nw sw-3	¶69	1272
R. F. Ide's Woods 1, 12n-7w, c sw sw-3	¶63	1299
SAGINAW COUNTY—		
Smith Pet. Co.'s Frost 2, 10n-6e, se sw nw-20	10	1554
St. Louis Pipe & Supply Co.'s Yadovack 1, 10n-2e, se nw se-13	*	2961
Cardinal Crude Oil Co.'s Haviland 1, 5n-3e, se se se-31	5	951

*Failures; †Junked; ¶Million cu. ft. gas.

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EASTERN FIELDS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
OHIO		
ATHENS COUNTY—		
Carpenter & Glaizer, John Smith 9	*	329
JEFFERSON COUNTY—		
Eastern Development Co., Fee 2	*	1575
MEDINA COUNTY—		
Litchfield O. & Dev. Co., Anna Everest 1	4	403
LICKING COUNTY—		
Ralph Bros., Inc., Seville Parr 4	1	708
JEFFERSON COUNTY—		
Eastern Development Co., Fee 2	*	1575
WASHINGTON COUNTY—		
C. D. Mosher & Co., John Pugh 1	1	475
David Ripley, David Ripley 1	1	700
S. F. Creighton & Co., T. Sheperd 1	1	1938
Leyde Oil & Gas Co., Vern Leyde 1	*	1320
C. & C. Strauss, Helen J. Burt 1	2	669
WEST VIRGINIA		
CABELL COUNTY—		
Pridmore & Atkins, Lucas Heirs 2	¶	1300
MARION COUNTY—		
R. M. Hanley & Co., Phillips 2	¶	....
Monroe & Laughlin, Wilson 1	3	....
MARSHALL COUNTY—		
Mfg. Light & Heat Co., S. B. Pyles 1	¶	2008
PLEASANTS COUNTY—		
Boyce Drilling Co., Robinson 1	*	2320
RITCHIE COUNTY—		
Clem S. Morris, Lucas Mahaney 1	*	2011
Lucas & Mahaney, Loftus 1	*	2070
ROANE COUNTY—		
L. C. Young & Co., Kee 1	¶	1724
J. T. Campbell & Co., T. J. Murray 1	3	1660
L. B. Reed & Co., B. F. Winters 1	*	1695
BOONE COUNTY—		
The Pure Oil Co., Federal Coal Co. 81	¶	....
Ira G. Sayers, Pickens 8	¶	....
WIRT COUNTY—		
John J. Shore, Mayle 2	1	....
O. D. Jones, DeVall 1	*	....

*Failures; †Junked; ¶Million cu. ft. gas.

THE OIL WEEKLY REPORT ON IMPORTANT

Wildcat Tests

ALABAMA

HOUSTON COUNTY — Rice O&G Co.'s Oakley Est. 2, se nw sw 9-3n-29e, sd for drilling line 3580 ft.

ARKANSAS

BRADLEY COUNTY — Phillips Pet. Co.'s Murphy Land Co. 1, nw nw 12-17-11, spd cemtd 20-in csg 110 ft, 13-in csg 740 ft, woc.

CALHOUN COUNTY — Ben Barnett, Tr's Freeman Smith 1, se nw sw 36-15-14, dr 3620 ft shale. Proetz & Brown's Calion Lbr. Co. 1, se sw 22-15-15, spd, cemt 10-in csg 647 ft.

COLUMBIA COUNTY—J. C. Buckbee, Tr's J. B. Wilson 1, sw ne 17-17-18, elev 319 ft, dr 4375 ft.

CRAWFORD COUNTY — Trumbo et al's Craddock 1, c nw ne 3-11-30, top Miss. lime 965 ft. top Wilcox 1527 ft, dr 1785 ft.

DALLAS COUNTY—Kel-Mac Oil & Roy. Co's Owens 2, nw sw 26-10-16, sd 1925 ft.

HEMPSTEAD COUNTY—Easton & May's Conway 1, ne sw 20-12s-27w, elev 290 ft, massive anhydrite 1913-69 ft, coring 2429 ft shale. M. D. K. Fitzwater et al's Lafferty 2, ne se nw 17-14-27, elec 330 ft, top red beds 2332 ft sd 2512 ft.

LA FAYETTE COUNTY—A. M. Neely's Meek 1, ne nw 35-19-25, rur. Ohio Oil Co.'s Bodcaw Lbr. Co. 3, nw nw 20-16-23, elev 250 ft, coring 7612 ft, anhydrite and sand, sg.

LITTLE RIVER COUNTY—Roberts et al's Hall 1, se se 22-13-29, owdd, td 1950 ft.

LONOKE COUNTY—Frank F. Silver's Jos. Chambers Est. 1, sw ne nw 17-2-27, rur.

MILLER COUNTY—King Oil Corp.'s Mann 1, 2-16-26, 10-in csg 200 ft. Deep Rock Oil Co.'s Williams 1, nw sw nw 6-16-25, top Nacatosh 1270 ft, dr 2915 ft shale.

OUACHITA COUNTY—Rhoda Armstrong's Bragg 1, se nw 25-13-18, 12½-in csg 52 ft, dr 1012 ft. Carnes & Harrell's Robertson 1, nw se 7-12-19, elev 176 ft, top Nacatosh 1404 ft, dr 2316 ft. O. F. Whittaker's Howard 1, nw ne 20-12-16, dr 2312 ft. Lion O. R. Co.'s Reynolds-Berg 1, se ne 28-15-15, dr 3493 ft. Phillips Pet. Co.'s Arnold 1, ne sw 27-15-15, dr 2730 ft, sandy shale; Cheatham 1, sw ne 27-15-15, dr 1475 ft, sticky gumbo; J. M. Farris 1, sw ne 27-15-15, rur; Gette (Rose) 1, ne se 28-15-15, dr 1260 ft, sandy shale; Harris 1, sw ne 28-15-15, dr 3568 ft, red beds, lime & shale; Mary Murphy 1, ne ne 28-15-15, setting 13-in csg td 805 ft; Mary Murphy 2, ne ne 28-15-15, lcn. Standard Oil Co. of La.'s Reynolds B-3, se ne sw 27-15-15, top Nacatosh 2035 ft, dr 4812 ft, shale & strks sand; Reynolds B-4, nw sw 27-15-15, mim. Jno. Pugh's Hildebrandt 1, se se 28-15-15, dr 4631 ft.

UNION COUNTY—J. C. Buckbee, Tr's Ezzell 2, ne nw 13-17-15, coring 4508 ft.

CALIFORNIA

FRESNO COUNTY

CURRY MOUNTAIN—Standard's So. Coalinga 1, 36-21-14, abn 2165 ft; Camino 1, 1-21-15, lcn.

CANTUA CREEK — Western Gulf's S.P.L. Co. 3, 3-17-15, dr shale and sand 6108 ft.

KERN COUNTY

KERN FRONT—American Explor. Co.'s No. 1, 16-28-27, td 2862 ft in os, to set 6⅝-in csg.

LOST HILLS — Associated's Williamson 2, 2-26-20, td 1143 ft, ran formation tester and recovered oily mud. Standard's United 1, 2-26-20, dr gray sand 6486 ft.

POSO CREEK—Bargol Oil Co.'s Bargol 1, 11-27-27, dr shale 2106 ft. McAdams Oil Co.'s No. 1, 32-27-28, lcn, not to be dr now.

SOUTH MARIPOSA—E. A. Bender's Robinson 1, 14-10-23, dr shale 552 ft.

DEVIL'S DEN—Don Pet. Co.'s Bates 1, 20-25-19, rig. Richfield Oil Co.'s Alferitz 2, 14-25-18, abn 3500 ft.

ELK HILLS—Elk Hills Pet. Corp.'s No. 1, 14-31-24, material on, lcn.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*	owdd—*old well drilling deeper.*
‡—*salt water (completions).*	owpb—*old well plugging back.*
†—*junked and abandoned.*	pb—*plugged back or plugging back.*
¶—*million feet of gas.*	r—*reaming.*
abd—*abandoned.*	rog—*rig on the ground.*
bbls—*barrels.*	rur—*rigging up rotary tools.*
br—*building rig.*	rust—*rigging up standard tools.*
b.s.—*basic sediment.*	sd—*shut down.*
csg—*casing.*	sdtr—*sidetracking.*
co—*cleaning out.*	sg—*show gas.*
dd—*drilling deeper.*	si—*shut in.*
dk—*derrick.*	so—*show oil.*
dr—*drilling.*	so & g—*show oil and gas.*
fsg.—*fishing.*	spd—*spudding.*
ft—*feet.*	sr—*straight reaming.*
hfw—*hole full of water.*	sw—*salt water.*
in—*inches.*	td—*total depth.*
lcn—*location.*	ur—*underreaming.*
m—*milling.*	wih—*water in the hole.*
mim—*moving in materials.*	wo—*workover.*
mit—*moving in tools.*	wocs—*waiting on cement to set.*
mot—*milling on tools.*	wosr—*waiting on standard rig.*
n, s, e, w—*north, south, east, west.*	
oih—*oil in hole.*	

McVAN—Framac Oil Co.'s Brown 2, 22-27-27, sd 1413 ft, to drop from report.

MT. POSO—R. S. Lytle's Dorsey 3, 26-27-28, td 1421 ft, top Vedder zone 1404 ft, to test. H. Mann's No. 2, 27-26-28, sd 1537 ft, to drop from report. Poso Pet. Co.'s No. 1, 2-27-27, sd 2004 ft. Union's Ford 1, 8-27-27, dr sand and shale 1996 ft; Tribe 11, 28-27-28, rig.

MOUNTAIN VIEW—Mohawk Oil Co.'s Earl Fruit 1, 10-31-29, dr sand and shale 3761 ft. Treasure Dr. Co.'s Treasure 1, 12-30-28, sd 5006 ft.

BUENA VISTA LAKE—Ohio Oil Co.'s K. C. L. A-7, 5-32-37, td 4218 ft, to test; at Strand, K. C. L. D-1, 1-30-25, dr sand and shale 8175 ft; at Grapevine, T. I. T. 1, 36-11-19, dr sand and shale 3078 ft.

EDISON—Pioneer Holding Co.'s Pioneer 2, 17-30-30, dr gray sand 2100 ft; R & R Dev. Co.'s R & R 3, 32-30-30, dr shale 520 ft.

GRAPEVINE—Reserve Oil & Gas Co.'s Tejon 2-6, 2-10-19, rur.

DOMINION — Santa Carla Oil Co.'s Bass Good Knight 1, 19-26-28, dr 970 ft.

BUTTONWILLOW — Seaboard Oil Corp.'s Kern 3, 8-28-23, dr sand and shale 3465 ft.

KERN RIVER—Seven Spot Oil Co.'s No. 1, 13-20-27, spud 5/31, dr.

COMANCHE POINT—Tejon Ridge Oil Co.'s Tejon 1, 23-32-29, td 2394 ft, rep. equipment.

SAN EMIDIO—The Texas Co.'s K. C. L. C-11-49, 11-11-22, formerly Ohio Oil Co.'s No. 11-49, td 7595 ft, to deepen.

McFARLAND—Woods & Bailey's No. 1, 16-26-26, sd 4488 ft.

MISCELLANEOUS

HUMBOLT COUNTY—The Texas Co.'s No. 2, 22-3-1, td 4357 ft, fsh.

KINGS COUNTY—Associated's No. 1, 35-23-17, rur. Kerndall & Associates' Spreckles 1, 16-24-18, td 4201 ft, to co, to acidize.

SAN LUIS OBISPO COUNTY—Avila Oil Co.'s No. 1, 10-31-13, grade. Barnsdall's Wreden 1, 24-28-17, td 3550 ft, redr at 3437 ft. Birch-Royer Oil Co.'s Patchett 1, 33-31-13, td 1801 ft, redr at 1480 ft. A. T. Jergins Trust's Lowther 1, 5-2-13, lcn; not to be drilled now. Pismo Pet. Co.'s Scott 2, 5-32-13, grade. J. C. Theriot's Holland 1, 22-32-22 td 2135 ft, to deepen. Willett Oil Assn's Jack 2, 10-25-15, sd 3648 ft.

SOLANO COUNTY—Amerada's Emigh 1, 26-4-2, td 4410 ft, good for 20,000,000 ft gas on test; cemented 11¾-in at 2940 ft.

TEHAMA COUNTY — Northern Co.'s Pet. Ewers-Mooney 1, 25-24-3, dr hard sand 7684 ft.

TULARE COUNTY—W. H. Fortine's Mosesian 1, 22-27-26, rig.

MONTEREY COUNTY—North Dome-Cholame Hills Oil Co.'s Hillman 1, 15-24-14, rig. Shell's Branch 1, 34-24-10, td 8994 ft, plug back, testing.

SANTA BARBARA COUNTY

COAL OIL POINT—Bankline Oil Co.'s No. 2, permit 191, td 5510 ft, redr at 1150 ft.

SANTA MARIA—Hall-Baker Co.'s Preisker 5, 19-9-34, dr 1800 ft.

EL CAPITAN—La Canada Oil Corp.'s No. 1, 35-5-30, dr 250 ft.

LOMPOC—Lompoc Pet. Co.'s Beauterbough 2, 18-7-34, sd 3940 ft.

BETTERAVIA—E. H. Moore's Union Sugar A-1, 25-10-35, dr shale 3235 ft.

SANTA MARIA—Union's Enos 19-1, 19-10-33, grade.

LOMPOC—York Oil Co.'s York 3, 33-8-34, setting boilers.

VENTURA COUNTY

SHIELLS CANYON — Bankline Oil Co.'s Calumet B-1, 3-3-19, td 4617 ft, tester recovered oil and salt water, to test again. The Texas Co.'s Shiells 129, 4-3-19, sd 4812 ft; Shiells 130, td 32-6 ft, to run formation tester.

BARDSDALE—Bestco Pet. Co.'s Frey 1, 2-3-19, dr gray sand 3834 ft.

PIRU—Bolsa Chica Oil Corp.'s Snow 3, 4-4-18, dr hard shale 2790 ft; Snow 4, dr 560 ft. R. R. Johnson Corp.'s No. 1, 21-4-18, sd 1640 ft.

SOUTH MOUNTAIN — Calco Pet. Corp.'s Calco 3, 17-3-20, dr 3464 ft. Honolulu Oil Corp.'s Hobson 1, 23-2-21, rig.

OJAI—Continental's Pirie 2, 12-4-23, td 1223 ft, to test.

BARDSDALE—El Rancho Oil Co.'s Elkins 1, 9-3-19, td 4041 ft, to deepen.

OXNARD—General's McGrath 2, 26-2-35, dr hard shale 7466 ft.

SIMI—Jas. S. Hull's No. 1, 2-2-1, sd 1715 ft.

VENTURA—Ventura Explor. Co.'s Sexton 1, 30-3-22, td 7068 ft, to deepen.

NEWHALL — Barnsdall's Rancho S. F. 1, 26-4-17, lcn.

ARTESIA—M. T. Bernstein's Millard 1, 25-3-12, td 5888 ft, redr at 3890 ft.

NORTH LONG BEACH—Geo. L. Clayton's No. 1, 31-3-12, td 6765 ft, swabbing hot water.

TORRANCE—Codri Oil Co.'s No. 1, 28-4-13, td 3902 ft, ran 475 ft of 4¾-in liner 59 ft perforated, to test. Eyer Pet. Corp.'s No. 1, 20-4-13, td 3794 ft, pumping 120 bbls net oil. Jas. S. Hull's No. 1, 20-4-13, td 2100 ft, oil sand 2000 to 2050 ft, r.

GARDENA—A. C. Edington's No. 1, rig.

WILMINGTON — General's Terminal 1, td 2694 ft, set 11¾-in at 2450 ft, co. Harbor Dr. Co.'s No. 1, 33-4-13, td 3535 ft, top os 3412 ft, wocs 8⅝-in at 3412 ft.

NEWHALL — Holbrook Pet. Corp.'s Newhall L. & F. Co. 1, 26-4-16, rur.

PUENTE—Numac Oil Co.'s Rowland 2, 14-2-10, td 2545 ft, pumping muddy water and little heavy oil.

PALOS VERDES — Pamaco Royalty Co.'s Burkhard 1, 2-5-14, foundation.

ROSECRANS—Republic Pet. Co.'s Trust 1, 18-3-13, dr shale 2301 ft.

DOMINGUEZ—West American Oil Co.'s Del Amo 1, 3-4-13, dr sand and shale 8697 ft.

NEWHALL—Yant Pet. Corp.'s Yant 5, 1-3-16, td 2022 ft, ran liner; Yant 6, rur.

PLACENTIA—Calif. Eastern Oil Co.'s Verde 1, 35-3-9, td 3181 ft, redr and to deepen.

NEWPORT—Commander Oil Co.'s Mesa 1, 29-6-10, td 2121 ft, to test on pump.

YORBA LINDA — De Augustine - Abrams-Daly's Barnett 1, 26-3-9, rur.

WESTMINSTER—Hillman & Long's No. 1, 14-5-11, td 7701 ft, wocs 8⅝-in at 5585 ft.

SUNSET BEACH—Geo. Terry's Gun Club 1, 17-5-11, dr sand and shale 5100 ft.

BARSTOW—Equitable Pet. Explor. Co.'s No. 1, 11-10-3, td 2348 ft, rep equip.

PUENTE HILLS—Tehama Pet. Co.'s Kraemer-Backs 2, 33-2-9, td 560 ft, to set 12½-in; Pellisier 1, 4-3-8, spud June 1, dr.

COLORADO

ADAMS COUNTY—Glenridge Oil Co., Hills 1, csl se se 27-3s-64w, dr 4250 ft.

ARCHULETA COUNTY—Wm. E. Hughes Estate Fee 17, ne se se 24-33n-2e, dr 800 ft.

K. L. Kendrick Crowley 1, 2-32n-1e, sd 1125 ft, for 6¼-in pipe. Oil City Pet. Co. & Archuleta O & G Co.'s Reeder 1, swc Lot 5, 24-33n-2e, td 575 ft. Ur 8¼-in pipe to bottom.

BACA COUNTY—Paul R. Robb Pet. Corp.'s

Lovettee 1, nw nw nw 24-32s-48w, sd 300 ft, to repair rig.

GRAND COUNTY—Interstate O & R Co.'s Himman 1, ne se nw 11-2n-81w, sd 1997 ft, and suspended.

HUERFANO COUNTY—Collins & Quinn's Fee 1, cnl nw se 4-28s-68w, making new hole at 3905 ft. Old td 4116 ft.

JEFFERSON COUNTY — Ruby Hill Oil Co.'s Braden 1, se se 24-4n-69w, dr 4450 ft.

LAS ANIMAS COUNTY—Mountain States Gasoline Corp.'s Nikola 1, cne se 10-34n-62w, sd 1873 ft. Suspended.

LAPLATA COUNTY—McGarr Pet. Co.'s 1, csl ne ne 27-33n-12w, sd 3200 ft.

LINCOLN COUNTY—Consolidated Smelting and Metals Corp.'s Hancock 1, ne sw 7-17s-52w, sd 2001 ft.

PARK COUNTY—South Park Oil Co.'s State 1, se se sw 16-11s-75w, td 4440 ft. Ur 6¼-in csg to bottom. Well swabbing 50 bbls per day.

YUMA COUNTY — Indian Territory Oil Co.'s Strangways, cnw sw 21-2s-43w, dr 2950 ft.

WELD COUNTY — Continental Oil Co.'s State Bank of Trenton 1, csw ne 21-8n-59w, dr 5050 ft.

FLORIDA

HILLSBOROUGH COUNTY — Southern Pet. Co.'s Mizzell & Williams 2, se ne 4-32s-21e, elev 120 ft, sd 965 ft lime.

JACKSON COUNTY — Mrs. Mamie Hammonds et al's Grandberry 1, sw ne 15-5n-9w, lub stuck drill pipe, td 700 ft sand.

LAKE COUNTY—Oil Dev. Co. of Fla.'s Gulf Expl. Co. 2, se se 17-24s-25e, elev 120 ft, coring 4005 ft chalk.

NASSAU COUNTY—St. Mary's River Oil Corp.'s Bank of Hilliard 1, nw nw se 19-4n-24e, elev 110 ft, dr with cable tools 100 ft.

POLK COUNTY—Dr. Edw. A. Hill's Polk County Lbr. Co. 1, nw nw 32-25s-25e, dk.

KANSAS

BARBER COUNTY—Sinclair Prairie's Gentry 1, ne ne ne 1-33s-15w, brr.

BARTON COUNTY—Davison et al's Birzer 1, sw se sw 22-17s-12w, dr 3045 ft. Schermerhorn Oil Co.'s Hunter 1, ne ne ne 29-18s-15w, pb 3540 ft, 17 M ft gas. Wakefield & Johnson's Bumm 1, sw ne ne 22-19s-12w, dr 2130 ft. Rosespring Drlg et al's Rick 1, sw sw sw 1-19s-11w, td 122 ft, wocs. Brouk et al's Keil 1, se se ne 11-16s-15w, rig. Rose & Lant's Redetzke 1, ne nw nw 10-16s-11w, spd.

BUTLER COUNTY—Ellis et al's Pettit 1-A, se se nw 21-28s-6e, dr 2930 ft. Rex & Morris' Olson 1, nw sw se 15-28s-6e, dr 1810 ft. McGinnis et al's Hinnen 1, ne ne sw 18-24s-4e, dr 1650 ft. Solomon's Church 1, sw ne se 8-28s-5e, rum. Estes et al's Edgar 1, nw nw se 1-28s-8e, fsg 1030 ft.

COWLEY COUNTY—Roth & Faurot's Guthrie 1, se ne nw 30-33s-8e, pb 2200 ft, 3 m ft gas, comp. Wakefield et al's Daniels 1, se sw se 3-30s-3e, dr 2900 ft. Braden Prod. Co.'s Sparks 1, se se nw 35-33s-4e, dr 1876 ft. McKnabb's Community 1, cne nw 14-34s-3e, dr 1350 ft. Benedum & Trees' Carson 1, sw sw nw 8-30s-4e, dr 2475 ft. Morton et al's Rogers 1, se se ne 1-31s-4e, dr 480 ft.

DECATUR COUNTY—Winkler-Koch's Vessey 1, cnw se 26-3s-26w, rig.

EDWARDS COUNTY — Stanolind-Elwell's Donovan 1, cse se 14-25s-18w, rust 4055 ft.

ELLIS COUNTY—Jones Bros. & Carpenter et al's Solomon 1, se se sw 28-11s-19w, td 3443 ft, wocs. Brunson & Ewers-Simpson's Gross 1, ne ne sw 29-14s-17w, td 3558 ft, D & A. Bridgeport Mach. & J. J. Hall's Madden Estate 1, ne nw nw 26-15s-18w, co 3010 ft. Harris & Haun et al's Schmeidler 1, se se sw 3-13s-17w, dr 3190 ft. Yarnell & Carlson's Phillips 1, nw nw se 2-14s-18w, dr 3652 ft. Rosespring et al's Union Pacific 1, ne ne ne 9-13s-20w, cored 3445-3463 ft. Empire's Herl 1, se se se 22-15s-19w, dr 1595 ft. Twin Drlg. Co.'s Copeland 1, ne ne sw 26-14s-19w, dr 3485 ft. James Brouk et al's Jacobs 1, nw nw se 31-15s-16w, ru. Parrish & Dennam's Walter 1, se sw se 14-13s-17w, dr 2025 ft. Trigg et al's Armbrister 1, se se sw 6-11s-19w, wocs. Jones & Shelbourn's Gunther 1, se se sw 9-11s-19w, dr 575 ft. Vickers Pet. Co.'s Kraus 1, sw sw nw 22-14s-19w, dr 1388 ft. Twin Drlg. et al's Schmidt 1, sw sw ne 22-15s-17w, ru. Bradley Oil et al's Penny Wann 1, se se se 13-15s-20w, sr 1295 ft. Empire O&R Co.'s Samuelson 1, ne ne sw 31-11s-16w, lcn. Kansas Development Co.'s Haller 1, se se nw 10-11s-18w, mim.

ELLSWORTH COUNTY—York State Oil Co.'s Koestle 1, nw nw se 12-17s-9w, mim.

GRAHAM COUNTY — Vickers & Phillips' Hutton 1, ne ne se 29-8s-22w, dr 3175 ft. Noah & Young's Hills 1, nw se se 19-10s-21w, rig.

GREENWOOD COUNTY—McGinnis' Lampe 1, nw ne sw 26-24s-8e, dr 740 ft.

HARVEY COUNTY—Harburney Oil Co.'s Scrag 1, nw nw se 24-22s-3w, fsg 2874 ft. Shawver's Judd 1, sw se ne 3-24s-2e, dr 915 ft.

HASKELL COUNTY—Kuhn Bros. et al's Nilson 1, sw sw se 21-28s-32w, dr 760 ft. Helmerich & Payne's Meredith 1, csw 10-30s-33w, lcn.

KINGMAN COUNTY—Lauck et al's Prather 1, cse 18-27s-8w, dr 3080 ft. Oklahoma Oil Corp. et al's Reeves 1, nw nw nw 29-27s-5w, dr 3206 ft.

McPHERSON COUNTY—Empire's Cunningham 1, se se se 26-18s-1w, td 2832 ft, pump 31 bbls oil. Johnson et al's Johnson 1, sw sw nw 33-17s-1w, dr 1735 ft. Hawkins et al's Ritikofer 1, ne ne se 2-20s-1w, ru.

NESS COUNTY — Continental Oil Co.'s Thompson 1, ce½ e½ sw 13-18s-26w, td 4462 ft, est 150 bbls. Newton Dev. Co.'s Tenny 1, nw nw se 19-18s-25w, spd & sd.

RENO COUNTY—Rosespring et al's Swanson 1, ne ne nw 1-23s-5w, dr 193 ft. Graham et al's Miller 1, ne ne se 36-25s-10w, rr. Dickey Oil Co.'s Shepherd 1-A, ne ne nw 22-26s-9w, td 4153 ft, acidizing. Miller et al's Detter 1, ne se nw 28-22s-7w, dr 157 ft.

RICE COUNTY—Gratton et al's Williams 1, sw sw nw 17-18s-7w, td 3363 ft, D & A. Gilmac Oil Co.'s Sargent 1, se se se 31-18s-6w, ur 8-in csg 2610 ft. Dickey Oil and Continental Oil Co.'s Newkirk 1, ne ne sw 11-18s-7w, td 3354 ft, D & A. Duwe & Schneider's Wright 1, ne ne ne 36-21s-7w, dr 3460 ft. Simpson & Noble et al's Pulliam 1, cs½ n½ ne 35-19s-8w, set 8-in csg 3010 ft, co. Skiles et al's Stout 1, se se se 6-21s-9w, dr 2759 ft. Beardmore et al's Fuller 1, sw sw se 23-18s-7w, 3198 ft. Simpson-Noble & Stanolind's Bowman 1, sw sw nw 22-19s-10w, dr 3049 ft. Shell's Maughlin 1, ne nw se 11-20s-8w, td 3235 ft, rust. Shell et al's Hafferman 1, cn½ n½ se 6-19s-9w, cored 2967-2977 ft. Saco Oil et al's Haxton 1, nw nw ne 30-19s-8w, lcn.

ROOKS COUNTY—Murfin et al's Westhusin 1, ne ne se 12-6s-18w, dr 3312 ft. Skaer Oil Corp. & Reese's Dryden 1, ne ne ne 28-10s-17w, dr 2650 ft. Lester & Dean's Burtt 1, se se ne 29-10s-20w, dr 1810 ft. Shoemake's Stebbins 1, ne ne sw 26-7s-17w, dr 860 ft. Helmerich & Payne's Bedard 1, cne 29-9s-19w, ru. L. C. D. Drlg Co. et al's Westhusin 1, cne se 11-9s-17w, dr 143 ft. Hartman & Blair et al's Hall 1, nw nw nw 25-10s-17w, dr 143 ft.

RUSH COUNTY—Pryor & Lockhart's Stegman 1, sw nw ne 11-16s-17w, dr 2985 ft. Boyle & Grossman's Wilson 1, ne ne ne 33-17s-19w, dr 2665 ft. National Ref. Co.'s Werth 1, nw ne ne 7-16s-18w, td 3572 ft, 800 ft oih.

RUSSELL COUNTY—Berry et al's Cook 1, ne ne se 19-11s-13w, sd 3533 ft. Eisenhour & Shaffer's Humes 1, sw sw sw 6-14s-2w, td 3407 ft. Darby Pet. & Continental Oil Co.'s Letsch 1, se ne nw 34-14s-13w, td 3265 ft, pb 2880 ft. Wakefield et al's Krug 1, ne nw sw 7-15s-14w, co 2485 ft. Coralena Oil Co.'s G. M. Sellens 1, sw se sw 20-15s-13w, dr 3035 ft. Hartman & Blair's Johnston 1, nw nw nw 11-13s-14w, dr 545 ft. Lario O&G Co. et al's Steinert 1, nw nw sw 21-15s-15w, co 590 ft. Reynolds' Fredrickson 1, se sw se 6-13s-12w, td 3170 ft, pb 3040 ft, 2000 gals acid, no test. Hartman & Blair's McAllister 1, sw sw se 24-13s-15w, co 2505 ft. Armer et al's Maier 1, ne nw ne 20-15s-14w, ru. Central Pet. Co.'s Benso "C" 1, se se sw 9-14s-15w, dr 3295 ft.

SALINE COUNTY—James Brouk et al's Otherlander 1, ne nw se 10-16s-3w, spd & sd.

SEDGWICK COUNTY—Dickey Oil Co.'s Ayers 1, sw sw nw 12-27s-2e, td 3230 ft, D & A. Joe Aylward et al's Harrison 1, se se sw 23-25s-2e, set 8-in csg 2480 ft. Lauck's Parke 1, se se ne 17-25s-2e, dr 2800 ft. Wakefield et al's Howard 1, se se ne 25-25s-2e, cellar.

SEWARD COUNTY—Helmerich & Payne's Hyde 1, csw 14-13s-34w, mim.

SUMNER COUNTY—Wilcox O&G Co. et al's Hess 1, se se nw 13-23s-2w, td 4605 ft, D & A. Matthews & Derrington's Berry 1, nw nw se 14-35s-1e, set 8-in csg 3022 ft. Wilson et al's Clark 1, csl nw 15-35s-1w, dr 4256 ft. Craft & Wilson's Nevitt 1, ne nw ne 36-32s-2e, co 3185 ft. Pryor & Lockhart et al's Knowles 1, sw sw sw 30-30s-1e, dr 3752 ft. The Texas Co.'s Reed 1, ne se se 11-31s-1w, fsg 564 ft. Helmerich & Payne et al's Elwell 1, nw nw ne 18-34s-1e, td 3967 ft, D & A.

TREGO COUNTY — Central Commercial's Wagg 1, nw nw se 17-13s-21w, sd 4170 ft. Hall et al's Deines 1, se se se 12-13s-24w, dr 1100 ft.

WOODSON COUNTY—Foster et al's Timm 1, se nw ne 36-25s-13e, sd 1465 ft. Sheedy's Abbott 1, ne ne se 16-25s-14e, dr 1030 ft. Sheedy et al's Fuhlhage 1, sw se sw 27-25s-14e, dr 365 ft. Lester et al's Weidie 1, ne ne se 17-25s-14e, sd 675 ft.

NORTH LOUISIANA

BIENVILLE PARISH — Rondeau et al's Locke 1, ne nw ne 9-15n-10w, elev 180 ft rur. Walters et al's Davis 1, 3-16n-9w, dk.

BOSSIER PARISH—Bowman-Tidwell's Nattin 1, 15-22n-14w, sd 1408 ft. Humphreys et al's Bulkley 1, 36-21n-13w, elev 212.3 ft. sw abn td 2306 ft. skidding over for new hole. Producers O&G Co.'s J. A. Skannal Est. 1, sw sw 22-17n-12w, cemtd 10-in csg 1304 ft. Triangle Drlg. Co.'s H. L. Skannal 2, sw se 23-17n-12w, spd cemtd 12½-in csg 252 ft. United Gas Pub. Serv. Co.'s Skannal Est. D-1, 22-17n-12w, dr 3672 ft.

CADDO PARISH — Pyramid O&G Co.'s Wheeler A-1, 16-18n-16w, elev 250 ft, tested sw again at 4850 ft sd old td 5210 ft. J. B. Hutchinson, Tr's Colquitt 1, 28-16n-13w, mim. Forbing-Persian Oil Co.'s Cupples 1, 24-16n-13w, rur. W. K. Henderson et al's Fee 1, 5-19n-15w, top Blossom 1885 ft so 2325-31 ft, dry abnd 2436 ft.

CATAHOULA PARISH—Ray McDermott's La. Cent. Lbr. Co. 1, nw nw 15-10n-5e, rur.

CALDWELL PARISH—Critchett & Wood's La. Cent. Lbr. Co. 1, 18-11n-3e, sd 1310 ft. Scott et al's Taylor 1, 20-14n-4e, dk.

CLAIBORNE PARISH—Sugar Creek Synd's Darrett 2, 31-20n-5w, elev 324 ft, dr 7555 ft. E. T. Oakes et al's Patton Est. 2, 1-20n-5w, top first anhydrite 3829 ft, dr 4010 ft massive anhydrite.

DE SOTO PARISH—W. F. Hyde's Ramsey 1, se nw 36-11n-11w, owdd, td 210 ft. Tarbud Oil Co.'s Caddo Realty Co. 1, nwc 2-13n-16w, sr 3160 ft. Jas. E. Carlson's Garland 1, nw nw 7-14n-14w, dk.

FRANKLIN PARISH—S. C. Jensen's Bailey 1, 12-11n-6e, sd 1435 ft.

GRANT PARISH—Tri-State Dev. Co.'s Ethridge 1, ne ne 19-7n-3e, rur.

JACKSON PARISH—Zeigen et al's La. Cent. Lbr. Co. 5, ne nw 13-14n-2w, owdd, td 1770 ft.

LINCOLN PARISH—Lide & Greer's S. Gardner 1, 10-17n-4w, coring lime 6298 ft.

MOREHOUSE PARISH—Henry E. Rondeau et al's Clark 1, se ne 10-20n-7e, elev 90 ft, rur.

NATCHITOCHES PARISH—B. C. Morrison's Moffet 1, sec 19-10n-10w, dk & mir.

RAPIDES PARISH—Texas Co.'s Weil 1, 53-1s-2e, cored sand so 5658-77 ft testing.

RICHLAND PARISH—J. F. Morrissey's W. T. Jones 1, 15-18n-7e, 10-in csg 1081 ft, dr 1948 ft. Arthur H. Wray's Slocum 1, 10-17n-6e, dr 2450 ft.

RED RIVER PARISH—H. D. Conley et al's Long-Bell 1, ne ne 19-13n-9w, dr 2558 lime. T. B. Shaw et al's Teekel 1, 34-13n-10w, 7-in csg 2500 ft, td 2830 ft.

SABINE PARISH—Keen et al's Long-Bell 1, 5-8n-13w, rur. Whithurst et al's Whitney Corp. 1, nw ne 8-9n-13w, dr plug in 9⅝-in csg cemtd at 3234 ft. A. H. Tarver's Baker 2, 36-8n-12w, fsh 5225 ft. Claude H. Smith's Whitney Corp. 1, 19-10n-13w, sd 3053 ft.

TENSAS PARISH—H. M. Jones' Chicago Mill & Lbr. Co. 1, nw sw nw 29-12n-10e, base Jackson 776 ft, 8⅛-in csg 776 ft, td 779 ft. Clara Nook Plant. 1, nw sw 32-12n-10e, rur.

UNION PARISH—Lent, Sears & Bocher's Frost Lbr. Co. 1, nec 27-21n-1e, sd 4545 ft. (Travis Peak).

WEBSTER PARISH—Ohio Oil Co.'s R. L. Holloway 6, ne sw 23-21n-10w, elev 210 ft, tested 25 mil ft wet gas 8125-47 ft (lower Trinity), dr 8218 ft. Red Hawk Oil Co.'s Baker 1, se nw 9-23n-9w, woc 12-in csg 200 ft. J. L. Edwards' Hooper 1, 8-17n-9w, sd 3016 ft. Skidmore et al's Barnette 1, nw sw 29-17n-9w, mim.

SOUTH LOUISIANA

ACADIA PARISH—Magnolia's Homeseekers 1, Esterwood prospect, sec. 54-10s-1w, dr shale 8978 ft.

ALLEN PARISH—Humble's J. A. Bel 2, Reeves prospect, sec. 28-6s-7w, dr shale 1600 ft.

CALCASIEU PARISH—Fred Oil Co.'s Faist 1, sec. 26-8s-10w, dr 3500 ft.

CAMERON PARISH—Magnolia's Hebert 1, Big Lake, sec. 13-12s-9w, dr shale and lime 8443 ft.

EAST BATON ROUGE PARISH—Cavalier Oil Co.'s Vignes 1, ne of Nettie, sec. 40-8s-2e, ru.

EAST FELICIANA PARISH—East Felicianan Oil Corp.'s West & Duding 1, sec. 37-1s-1w, sd 15 ft.

IBERIA PARISH—Texas Co.'s State Fausse Point 2, Fausse Point, sec. 35-11s-8e, dr shale 1609 ft.

JEFFERSON DAVIS PARISH—Shell's Lacassine 1, Hayes prospect, sec. 20-11s-5w, fsh 9844 ft. Stanolind's Calcasieu National Bank 1, South Jennings prospect, sec. 15-10s-3w, fsh 165 ft. Strake Pet. Corp.'s Miller Estate 1, Woodlawn prospect, sec. 7-9s-5w, dr shale 6156 ft.

ST. JAMES PARISH—Shell's Colonial Sugar 1, Convent prospect, sec. 5-12s-5e, running geophones every 500 ft to test salt at 7522 ft.

ST. LANDRY PARISH—Limited Oil Co.'s Miller Estate 1, Cankton prospect, sec. 47-8s-4e, abn 9005 ft.

ST. MARTIN PARISH—Texas Co.'s Lake Mongauloi 2, Lake Mongauloi salt dome, sec. 14-10s-9e, dr water sand 5841 ft; St. Martin Land Co. 8, Henderson prospect, sec. 9-8s-7e, sdtr 7667 ft.

TERREBONNE PARISH—Humble's Continental Fur Co. 1, Bayou Terrebonne prospect, sec. 30-17s-14e, dr shale 1826 ft. John P. Bech's Realty Owners 1, Houma Townsite prospect, sec. 103-17s-17e, ru.

VERMILION PARISH—Continental's Hebert 1, Abbeville prospect, sec. 20-12s-3e, dr

shale 8996 ft. Del Shell Exploration Co.'s Landry 1, Jefferson Island dome, sec. 1-13s-4e, dr shale 2100 ft.

MICHIGAN

ALPENA COUNTY—C. W. Teater's Nevins 1, 32n-6e-18, sd 950 ft.

BAY COUNTY—H. L. McEvoy's Glander 1, 14n-3e-18, csg 8-inch at 850 ft. A. H. Webber's De Long 1, 16n-3e-35, dr 2000 ft.

CLINTON COUNTY—Petroleum Exploration Co.'s Cable 1, 5n-2w-12, sd 2900 ft.

CHIPPEWA COUNTY—F. D. Barton's Kretan 1, 41n-7e-17, sd 680 ft.

CRAWFORD COUNTY—T. F. Caldwell, Inc.'s Huston 1, 25n-1w-7, dr 2440 ft.

GLADWIN COUNTY—Goll, Graves, Mechling's Oard 1, 18n-1w-25, sd 1100 ft; State 1, 19n-2e-30, sd 1300 ft; Wixom 1, 17n-1w-35, dr 1500 ft.

GRATIOT COUNTY—C. W. Collin's Tomlin 1, 11n-4w-27, csg 5 in. 3198 ft, dr 3204 ft. Harley Williams' Smith 1, 9n-2w-29, dr 2200 ft.

GENESEE COUNTY—Jerome Nadell's Olds 1, 9n-8e-35, sd 850 ft. C. E. Bliss' Crawford 1, 9n-8e-27, mim.

IONIA COUNTY—Frank Lyon's Geiger 1, 8n-8w,29, sd 2900 ft. Terry Dale's Tew 1, 6n-7w-12, fsg swab, csg 8 in. at 2858 ft, 2400 ft sw in hole, sg.

HURON COUNTY—Wallace Markle's Opaka 1, 15n-11e-4, sd 3006 ft, so.

KENT COUNTY—James S. Barton's Smith 1, 10n-10w-29, dr 2650 ft. Michigan Oil Exploration's Croff 1, 7n-9w-35, dr 3000 ft.

LAKE COUNTY—C. W. Teater's McCabe 1, 20n-12w-26, dr 1400 ft.

LENAWEE COUNTY — Socony Vacuum's McCarberry 1, 5s-5e-36, testing, acidized Trenton oil show 2552 ft. Mott and Denman's Huffman 1, 6s-3e-26, dr 1400 ft.

MASON COUNTY—Dragoon Development's Young 1, 17n-15w-15, sd 2520 ft. Northern Oil Co.'s Burke 1, 17n-15w-26, dr 2350 ft.

MISSAUKEE COUNTY — M. J. Ingold's Donley 1, 22n-8w-31, sd 300 ft.

MONROE COUNTY—Trenton Oil Co.'s Stone 1, 7s-6e-24, dr 200 ft.

MONTCALM COUNTY—Morris Oil & Gas Co.'s Young 1, 10n-6w-36, sd 2200 ft. Terry Dale, Inc.'s Higgins 1, 9n-8w-13, dr 450 ft. Robert Gallagher's Bentley 1, 11n-7w, Sec. 33, lcn. K. B. Montegel's Loree 1, 9n-5w, ne sw nw-18, br. W. E. Voss, Tr.'s Bristol 1, 10n-8w-23, dr 1000 ft.

SAGINAW COUNTY—T. F. Caldwell, Inc.'s McDonagh 1, 10n-5e-19, Dundee 2955 ft, dr 3025 ft. B. J. Skinner's Sheldon 1, 10n-3e-11, csg 5 in. 2881 ft, sg 2874 ft.

TUSCOLA COUNTY—Dr. V. R. Kirkham's Boyce Farm 1, 14n-7e-24, Dundee 2604 ft, dr 2789 ft, 200 ft fluid in hole.

MISSISSIPPI

CLAIBORNE COUNTY — Claiborne O&G Drlg. Co.'s Crawford 1, 6-13n-4e, dr 902 ft sandy shale.

JONES COUNTY—Snow-Black Pet. Co.'s Fox 2, 31-7n-12w, dr 3103 ft.

LAMAR COUNTY—Snow-Black Pet. Co.'s Miller et al 1, ne sw 3-4n-15w, sd 1750 ft.

SMITH COUNTY—Howie & Lewis' Broadfoot 1, 15-4n-7e, co td 1500 ft.

WILKINSON COUNTY—T. S. Stoneman et al's L. T. Ventress 1, 38-2n-3w, lcn.

MONTANA

DANIELS COUNTY—Whitetail Oil & Gas Co.'s 1, nw ne nw 10-36n-50e, dr 1853 ft.

FERGUS COUNTY—Judith Operating Co.'s Government 2, w nw ne 35-22n-17e, dr 1048 ft. H. C. Rowland's Government 3, cel ne nw 18-17n-24e, dr 416 ft.

GLACIER COUNTY—L. P. Jackson and Stanley Gray Dunbar 1, nw se nw 23-34n-7w, dr 3030 ft.

PONDERA COUNTY — Gordon Campbell Hughes 1, nw ne nw 12-30n-4w, dr 1423 ft. Klinch Pet. Ltd.'s Hollam 1, nw nw nw 12-28n-6w, sd 2200 ft, for pipe. Texas Co.'s 1 Unit 1, cnw se 32-31n-5w, dr 2575 ft; R. C. Tarrant cnw nw sw 9-27n-5w, dr 270 ft.

TOOLE COUNTY—Boyd Kyle Wolsti 1, cse se 3-33n-1w, dr 1850 ft.

NEW MEXICO

LEA COUNTY—Barney Cockburn & Rowan-Nichols Oil Co.'s H. G. Mattern 1, c sw se 7-22s-37e, elev 3426 ft, dr 3430 ft. C. & G. Oil Co.-The Texas Co.'s Ellen Weir 1, c ne ne 14-20s-37e, elev 3564 ft, top anhydrite 1348 ft, td 3893 ft, used 2500 gals acid, prod. settled to 5 bbls oil and 2,250,000 ft gas daily, to dd. Conoco & California Co.'s E. M. Elliott 1, c sw sw 22-22s-37e, elev 3347 ft, fsh 3539 ft, flows by heads. Gulf Oil Corp.'s S. J. Carr 1, c nw sw 3-24s-37e, elev 3267 ft, dr 1310 ft; L. M. Buffington 1, c nw sw 13-25s-37e, elev 3091 ft, sd 1995 ft; S. T. Burk 1, c ne ne 28-19s-37e, elev 3602 ft, tested dry at 3930 ft, dd to 3971 ft, swab dry; E. A. King 1, c sw nw 28-21s-37e, elev 3469 ft, cem cas 3629 ft; F. C. King 1, c sw nw 5-23s-37e, elev 3371 ft, dr 150 ft; W. T. McCormack 1, c ne ne 32-21s-37e, elev 3464 ft, dr 3700 ft; A. B. Reeves 1, c nw sw 29-20s-37e, elev 3529 ft, pb fr 3859 to 3846 ft, shot with nitro, sdo; J. A. Stuart 1, c sw ne 10-25s-37e, elev 3120 ft, re-cem cas, td 2855 ft. Humble's W. B. Farrell 1, c sw se 22-22s-37e, elev 3341 ft, dr 3225 ft; G. B. Hadfield 1, c nw se 21-25s-37e, elev 3082 ft, td 3201 ft, gauged 216 bbls. 22 hrs and 750,000 ft gas, complete; J. T. Lanehart 1, c ne sw 21-25s-37e, elev 3068 ft, est 10,000,000 ft gas 3224 ft, td 3280 ft, tested 8 bbls oil, 3 hrs. Landreth Prod. Corp.'s E. H. Grizzell 1, c se sw 5-22s-37e, elev 3437 ft, dr 3110 ft. Liberty Oil and Drlg. Co.'s J. F. Hair-Repollo 1, sw sw se 24-24s-37e, elev 3157 ft, td 3702 ft, dry and abd. Magnolia's E. A. Carson 1, c nw sw 28-21s-37e, elev 3463 ft, top salt 1348 ft, top lime 2700 ft, dr 2785 ft; Will Cary 1, c ne se 21-22s-37e, elev 3361 ft, top anhydrite 1108 ft, dr 3110 ft; Scharbauer 1, c nw ne 29-16s-35e, lcn for 5000-ft test. Maljamar O&G Corp.'s M. E. Baish 6, c nw se 21-17s-32e, Maljamar area, elev 4028 ft, td 4129 ft, pb to 3950 ft, used 2000 gals acid, flowed 80 bbls after 5000 gals acid. Ohio Oil Co.'s W. H. Turner 1, c ne se 29-21s-37e, elev 3477 ft, td 3800 ft, swabbed 2 bbls oil per hr, used 3000 gals acid, testing. N. G. Penrose & Rowan-Nichols Oil Co.'s Will Cary-Humble 2, c ne sw 22-22s-37e, elev 3345 ft, td 3570 ft, sd to set packer; Cary 3, c se nw 22-22s-37e, elev 3364 ft, sd 1150 ft; Cary 4, c sw nw 22-22s-37e, sd 1146 ft. Plains Production Co.'s R. L. Mosely-Repollo 1, c nw se 34-24s-37e, elev 3168 ft, sul w at 3550-3551 ft, pb to 3530 ft, flows 8 bbls daily, sd for shot; Geo. Smith-Humble 1, c se se 4-25s-37e, elev 3174 ft, td 3750 ft, dry and abd. Repollo Oil Co.'s J. T. Lanehart 1, se nw nw 28-25s-37e, elev 3028 ft, base salt 2240 ft, cem cas 3292 ft; Frances Stuart 1, se nw se 10-25s-37e, elev 3114 ft, cem cas 1290 ft. Samedan Oil Corp.'s Marshall 1, c sw nw 12-21s-36e, elev 3540 ft, dr 3260 ft; C. U. Parks 1, sw sw sw 14-22s-37e, elev 3339 ft, pb fr 3800 to 3620 ft for shot. Skelly Oil Co.'s J. V. Baker 2, c nw nw 27-22s-37e, elev 3341 ft, rust, td 1140 ft; Ellen Sims 1, c nw se 3-23s-37e, elev 3300 ft, dr 360 ft; F. S. Stuart 1, c ne nw 15-25s-37e, elev 3107 ft, dr 200 ft. Sun Oil Co.'s B. T. Lanehart 1, c se se 20-25s-37e, elev 3042 ft, top anhydrite 971 ft, top salt 1145 ft, base salt 2510 ft, dr 2670 ft; A. D. Richards 1, c ne se 6-23s-37e, elev 3376 ft, base salt 2610 ft, td 3798 ft, pumps 35 bbls oil and 35 bbls w, complete. The Texas Co.'s E. L. Alexander 1, c lot 3, or c nw sw 7-21s-37e, elev 3504 ft, dr 3200 ft; W. T. Lanehart 1, c ne¼ 29-25s-37e, elev 3031 ft. top anhydrite 965 ft, base salt 2335 ft, gauged above 100,000,000 ft dry gas at 2770 ft, sd 3156 ft. Tide Water's Anna Walden 1, c se ne 21-22s-37e, elev 3352 ft, dr 2900 ft.

OKLAHOMA

ATOKA COUNTY — Riverland O&G Co.'s Jones 1, sw sw ne 4-3s-9e, dr 2522 ft. Malarnee et al's Ranch 2-A, cse se 35-2s-13e, owdd, otd 3136, dr 3230 ft. Prairie Investment Co.'s Cobb 1, sw ne nw 19-3s-11e, rum. Phelps & Coats et al's Fidelity 1, se sw nw 23-1s-12e, dr 600 ft.

BECKHAM COUNTY—Jo-Gail Drlg. Co.'s Gilliland 1, cne ne 33-8s-26w, mach.

CARTER COUNTY—Carter Oil Co. et al's Leon Voorhees 1, cse sw 34-5s-2w, td 6470 ft, wocs. Hammond's Lile 1, sw se se 8-5s-1e, dr 400 ft.

COAL COUNTY—Shell Pet. Corp.'s Hill 3, se se nw 30-3n-10e, td 6457 ft, pb 6330 ft, dr stem test. Sinclair Prairie's Culver 1, ne ne sw 16-1n-8e, rig. Mitchell's Quiett 1, ne nw sw 35-1n-8e, mit. Carter & Magnolia's James 1, sw nw sw 35-1s-8e, br. Continental's King 1, ne sw ne 26-1n-8e, rig.

GARFIELD COUNTY—Sherry et al's Hoken 1, nw nw sw 32-20n-4w, td 6276 ft, co. Stanolind-Amerada's Brunken 1, sw sw ne 32-23n-4w, sd 6133 ft.

GARVIN COUNTY—Carter et al's Wood 1, nw sw se 5-4n-3e, coring 3010-3018 ft. McElreath & Suggett's Lasater 1, se se sw 2-2n-1w, dr 1880 ft.

GRADY COUNTY—Stevens' Mays 1, ne ne ne 1-3n-8w, br.

HARMON COUNTY—Lioalko Trust's Crasnoe 1, se se sw 14-3n-25w, fsg 2628 ft.

HUGHES COUNTY—Phillips Pet. Co.'s Eberle 1, ne ne sw 12-5n-9e, td 5540 ft, rust. Sivils et al's Montgomery 1, nw sw nw 7-9n-9e, ur 6-in csg 3280 ft. Blackwell O&G Co.'s Long 1, se ne nw 29-9n-9e, fsg 1695 ft. Sinclair Prairie et al's Wilkey 1, sw sw sw 23-9n-8e, dr 2698 ft.

JACKSON COUNTY—John Dickson et al's Wright 1, ne nw se 19-1n-19w, dr 2654 ft. Burnham's Oliver 1, nw nw se 26-1n-20w, dr 1806 ft. Ben Russell's Daniel 1, nw ne se 13-3n-20w, mim.

JEFFERSON COUNTY — Red River Oil Co.'s Trout 1, se ne ne 6-8s-7w, sg 2125-2135 ft, td 2212 ft. Pearson et al's Douthitt 1, ne ne ne 24-6s-9w, dr 1510 ft.

KAY COUNTY—Allen & Texas Co.'s Fulton 1, se se se 18-27n-4e, dr 1425 ft.

KIOWA COUNTY—Beeler & Klein's Parrish 1, se se nw 3-6n-15w, ru & sd. Atlantic Oil Co.'s Ta-Home 1, ne nw ne 24-7n-16w, td 1354 ft, D & A.

LE FLORE COUNTY—McGraw et al's Tidwell 1, cnw se 17-3n-22e, sd 1750 ft.

LINCOLN COUNTY—Amerada et al's Zimmerman 1, sw sw ne 10-12n-5e, dr 3523 ft. Mid-Continent's Hillman 1, sw se ne 29-13n-6e, spd.

LOVE COUNTY—Sinclair Prairie's Stockton 1, se se sw 26-6s-2w, td 8556 ft, reaming core hole. Amerada-Stanolind's Westheimer & Daube 1, sw se sw 27-6s-2e, td 7363 ft, pb 2970 ft, flow 2400 bbls oil.

MARSHALL COUNTY — Helmerich & Payne's Taliaferro 1, nw se sw 26-5s-5e, dr 400 ft.

McCLAIN COUNTY — Arab Pet. Corp.'s Autry 1, nw nw nw 16-7n-3w, sd.

McINTOSH COUNTY—I.T.I.O. Co.'s Toncred 1, sw nw se 9-9n-14e, pb 2731 ft, 3 shots 2704-2730 ft. Dieckman's McIntosh 1, se se se 4-12n-17e, dr 500 ft.

NOBLE COUNTY — Stanolind-Amerada's Gilham 1, ne se se 14-22n-1e, rig.

OKFUSKEE COUNTY — Champlin Ref. Co.'s Thompson 1, sw sw nw 7-13n-8e, fsg. Amerada-Stanolind's Wells 1, sw sw nw 7-11n-7e, sd 4503 ft.

OKLAHOMA COUNTY—Hollenbach et al's Cooper 1, nw nw ne 15-11n-1e, td 6466 ft, D & A. O'Shaughnessy Inc.'s Berlowitz 1, se sw ne 9-12n-3w, dr 2475 ft.

OSAGE COUNTY—Midco et al's 1, nw nw se 11-23n-6e, sd 2893 ft. Gray & Tolson's 1, sw sw ne 33-25n-7e, dr 1225 ft. Stoner & Miller's 1, nw ne sw 18-22n-8e, spd.

PAYNE COUNTY — Amerada - Stanolind's Pratt 1, se se se 29-19n-5e, dr 3440 ft. Denver Prod. et al's Pratt 1, nw nw nw 20-18n-3e, td 4103 ft, rust.

PITTSBURG COUNTY—Oklahoma District Oil Co.'s Beeler 1, ne ne sw 7-7n-14e, rig.

PONTOTOC COUNTY — Sandback et al's Sands 1, ne ne ne 20-3n-5e, dr 1217 ft.

POTTAWATOMIE COUNTY — Wofford Bros.' Sewell 1, sw sw se 14-7n-3e, rig.

SEMINOLE COUNTY—Tom Phillips & Kimraw Drlg. Co.'s Chemperney 1, se se nw 7-6n-7e, spd. John Graham et al's Castleberry 1, sw se nw 8-5n-7e, rur. Amerada-Stanolind's

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STEPHENS COUNTY—Endicott et al's McFatridge 1, nw nw sw 11-3s-9w, dr 1406 ft. McCasland's Parker 1, ne ne sw 2-1n-6w, sd 2518 ft.

TILLMAN COUNTY — Gulf Oil Corp.'s Wearmouth 1, se nw se 31-1s-16w, dr 4655 ft. Johnson, Young & Mitchell's Donahoe 1, se nw nw 7-4s-17w, dr 1450 ft. Gulf Oil Corp. et al's McWilliams 1, nw sw sw 15-3s-17w, rur. Bernheim's Tate 1, ne ne nw 16-1s-19w, pits. Shirley Clum et al's Moriele 1, nw nw se 16-4s-14w, dr 1186 ft. Smith's Hammill 1-A, ne nw nw 6-5s-15w, dr 1200 ft.

EAST TEXAS

ANDERSON COUNTY—Gulf Oil Corp.'s M. J. Ross 1 (54.7-ac), Robt. Irwin sur, Camp Hill area, elev 487 ft, top Georgetown lime 5452 ft, co 5476 ft. Tide Water and Seaboard Oil Corp.'s J. B. Edens 15 (988.6-ac), Samuel Snider sur, Cayuga field, Trinity sand test, elev 313 ft, Pecan chalk 2245-2410 ft, dr 2450 ft.

BOWIE COUNTY—Westmount Oil Co. et al's R. H. Phillips 1 (115-ac), J. N. Hancock sur, 10 mi n Oak Grove, elev 340 ft, top Georgetown lime 1533 ft, base anhydrite 2890 ft, dr 3021 ft.

CHEROKEE COUNTY—T. J. Wood et al's J. E. Huggins 1 (80-ac), Levi Jordan sur, 2 mi sw Rusk pool, elev 457 ft, dr 3600 ft.

COLLIN COUNTY — Port Bolivar O&R Co.'s O. G. Durning-Clarkston 1-A (140-ac), Wm. Creager sur, Pat. 1193, elev 722 ft, dr 3955 ft.

FALLS COUNTY—J. Edward Mills et al's Sam Grucholski 1 (40-ac), Dennis Herold League, 5 mil sw Kosse, elev 521 (est.) ft, top chalk 2114 ft, dr 2500 ft.

FANNIN COUNTY—E. V. Abernathy and A. F. Carter's G. D. Galloway 1 (320-ac), W. M. Rice sur, top Georgetown lime 1697 ft, sd in lime 2225 ft. L. P. Kean et al's R. L. and W. M. Kelley 1 (160-ac), Wm. Kelley sur, top Georgetown lime 2610 ft, sd 2880 ft.

FRANKLIN COUNTY—Earl Bateman Drlg. Co.'s Eula Phillips 1 (38½-ac), Wm. Bridwell sur, top Pecan chalk 1342 ft, dr 1500 ft. Joe DeGrazier et al's F. M. Batts 1 (30-ac), F. M. Batts sur, dk. Lucey Pet. Co. et al's W. N. Crawford 2 (25-ac), O. James sur, Pecan chalk 1597-1778 ft, top Georgetown lime 3468 ft, top Paluxy series 4131 ft, top sand 4158 ft, td 4300 ft, testing. J. J. Werby et al's Sanders 2 (82-ac), Wm. F. Dyer sur, rig.

GRAYSON COUNTY — Olson Drlg. Co.-James H. Gardner et al's SW Life 1 (160-ac), J. C. Jamison sur, A-865, 3 mi n Pottsboro, elev 767 ft, top Sylvan shale 4870 ft, Viola lime 4901-5096 ft, td 5890 ft, pb to 5440 ft, fsh dp. Port Bolivar O&R Co.'s Creed Taylor 1 (160-ac), J. Fitzhugh sur, 3 mi se Gunter, sd 3931 ft.

HOPKINS COUNTY—Dilworth S. Hager, W. P. Luse and Leon Russ' J. E. Worsham 1 (150-ac), A. O. Wetmore sur, cem cas 60 ft.

HOUSTON COUNTY—Branch et al's P. S. Griffiths 1, Frank Johnson sur, 3 mi sw Crockett, lcn. Ellison, McBride, Haberle & Thornton's J. E. Bean 1 (40-ac), Eli Steadman sur, 1½ mi nw Grapeland, elev 482 ft, top Navarro 4245 ft, top Pecan (broken) chalk 4660 ft, base hard chalk 4894 ft, dr 5200 ft.

KAUFMAN COUNTY—Colton and R. P. Lester's Barrow Bros. 1 (40-ac), J. D. Taylor sur, 8 mi ne Elmo, Trinity sand test, elev 528 ft, Austin chalk 2235-2681 ft, sd for w 2710 ft. J. M. Scott and J. B. Woodside's E. Robinson 1 (80-ac), A. Chirnio sur, 2 mi w Scurry, top Austin chalk 1200 ft, sd 2135 ft.

LAMAR COUNTY — Barrett, Saloman & Brooks' Haynes-McCuistion 1 (25-ac), A. W. Wright sur, 4 mi ne Garrett Bluff, elev 443 ft, Georgetown lime 275-738 ft, top Paluxy series 739 ft, sd 1900 ft. J. A. Forester et al's J. S. Woodward 1 (18¾-ac), J. W. Woodward sur, 1½ mi e by s of Minter, elev 402 ft, top Georgetown lime 2256 ft, Paluxy sand 3060-3144 ft, top anhydrite 3735 ft, base hard anhydrite 4075 ft, broken to 4105 ft, sd 4516 ft.

LIMESTONE COUNTY—Dan H. Daugherty et al's Sallie Welch 1 (94-ac), Pedro Varella sur, 4 mi w Groesbeck, Austin chalk 2350-2650 ft, top Woodbine series 2890 ft, testing 3158 ft. C. F. Lytle et al's J. L. Thompson 1-T (141-ac), w side Mexia field, elev 459 ft, cem 7-in cas 6002 ft, td 6065 ft, tested salt water flow with gas, pb to 6059 ft, testing.

NAVARRO COUNTY — E. M. Thomason Holdng Co.'s Estes Bros. 2 (58.2-ac), Wm. Gilbert sur, 1 mi e Roane, top Austin chalk 1504 ft, hard chalk 1805-2131 ft, dr 2715 ft.

RED RIVER COUNTY—J. S. Abercrombie Co.-Harrison Oil Co.'s Southern Pine Lumber Co. 1-A (392.57-ac), D. D. Bruton sur, 12 mi ne Clarksville, elev 407 ft, Georgetown lime 665-1020 ft, top Paluxy 1057 ft, anhydrite 1740-1800 ft, testing oil saturated sand in Glen Rose 2111-2118 ft. R. H. Manning and Texfornia Co.'s Hocker-Hughes 1 (80-ac), MEP&P Ry. sur No. 642, 6 mi sw Lydia, sp and sd.

RUSK COUNTY—Pure Oil Co.'s W. H. Faulkner 1 (60-ac), Wm. Elliott sur, 5 mi e Mount Enterprise, Trinity sand, or 8500-foot test, elev 563 ft, Pecan chalk 2650-2890 ft, show gas when cut through fault at 2599-2609 ft, Austin chalk 3286-3450 ft, top Georgetown lime 3446 ft, stringer anhydrite 5320-5325 ft, top massive anhydrite 5945 ft, tested salt w at 6177-6298 ft, dr 6290 ft.

TITUS COUNTY—Jule Alford, Tr., et al's J. E. Fry 2 (47.48-ac), I. P. Stern sur, about 1200 ft ne Fry 1, jkd test, elev 333 ft, dr 770 ft. Hollandsworth Drlg. Co.'s A. O. Brown 1 (52/100-ac), c lot 1, blk 41, Talco townsite, elev 377 ft, dr 915 ft. R. C. Horne et al's J. F. and L. Barton 1 (3-ac), M. V. Delgado sur, rig. Humble O&R Co.'s Hughes & King 1, Asa Rinehart sur, rig. Jones & Shelburne's Hazelwood 1 (10-ac), I. P. Stern sur, elev 342 ft, Pecan chalk 1320-1520 ft, top Red Beds 3238 ft, dr 3300 ft. W. P. Luse et al's W. T. Sullivan 1 (4-ac), M. V. Delgado sur, Pecan chalk 1635-1828 ft, top Georgetown lime 3440 ft, dr 3750 ft. Magnolia Pet. Co.'s C. M. Carr 1 (70-ac), M. V. Delgado sur, elev 371 ft, Georgetown lime 3952-3979 ft, cut fault at 3979 ft, top Paluxy 4181 ft, broken pay 4189-4248 ft, pumped and flowed 26.81 bbls, per hr initial on 22-hr gauge. B. C. Morrison et al's Lewis Sanders 1, c lot 1, blk 30, Talco townsite, elev 371 ft, top Pecan chalk 1670 ft, dr 2220 ft. Nivla Oil Corp.-Sutton & Hawkins' J. N. Kelley 1, nec 15.76-ac lse, J. Salmon sur, A-506, elev 348 ft, Pecan chalk 1533-1730 ft, top Red Beds 3181 ft, top Georgetown lime 3640 ft, dr 3870 ft; W. H. Gray 1 (2-ac), blk 10, Talco townsite, dr 150 ft. Haynes B. Ownby Drlg. Co. et al's Joe Easterling-Jones 1, c lot 6, blk 16, Talco townsite, elev 361 ft, Pecan chalk 1620-1785 ft, top Red Beds 3580 ft, top Georgetown lime 4011 ft, Paluxy broken pay 4264-4342 ft, flowing by heads. Allen M. Peairs et al's fee 1, Talco townsite, Pecan chalk 1642-1860 ft, dr 2860 ft. Red Iron Drlg. Co.-Dean Bros.' A. Cornelius 1 (3-ac), M. V. Delgado sur, dr 600 ft. R. B. Sanders & Murchison Bros. (Nemo Oil Co.'s), Talco Ind. School 1 (5-ac), I. P. Stern sur, elev 372 ft, Pecan chalk 1665-1860 ft, Austin chalk 2451-2481 ft, top Woodbine 3024 ft, top Red Beds 3138 ft, top Georgetown lime 3440 ft, top Paluxy 4185-4340 ft, flowed 5½ bbls per hr by heads, sd to pump. Tide Water Oil Co.'s C. M. Carr 1 (72-ac), M. V. Delgado sur, elev 358 ft, top Pecan chalk 1656-1773 ft, top Georgetown lime 3492 ft, top Paluxy 4163 ft, coring 4190 ft.

HARRISON COUNTY—W. F. Bridwell's Clapp 1, F. C. Baker sur, elev 285 ft, tested 30 ft oil in dr stem test 2382-2406 ft, cemtd 9⅝ in csg 2380 ft, dr plug and testing, td 2406 ft.

PANOLA COUNTY — Logansport P. I. Co.'s Rushing 1, Manning Smith sur, elev 180 ft, dr 2422 ft shale.

SHELBY COUNTY—Farley & Sommers' T. E. Green 1, J. English sur, dr 1265 ft shale. Potter & Rubeling's O. H. Polley 1, Wm. Whisner sur, elev 292 ft, fsg 3350 ft. H. A. Stebbinger et al's Pickering Lbr. Co. 1, C. F. Henry sur, elev 208 ft, dr 4015 ft.

SOUTH TEXAS

ARANSAS COUNTY—Buckingham Oil Co.'s McCampbell 1, lots 8 & 9, sec 41; lots 8 & 9, sec 42, McCampbell subd, James Orick sur, 2 mi nw of Aransas Pass, 685 feet fr San Patricio County line, td 7501, plugged back to 6534 ft, blew out while making DST, showed oil and gas, wait on bigger rig to be used in recovering stuck drill pipe, still tearing down old rig.

ATASCOSA COUNTY—R. C. Lee, Trustee (Atascosa Trust), U. A. Doumch 1, 152-ac tr, blk 10, J. T. Russell sur No. 1222, 3 mi n Poteet, td 3521, ran electric formation test, set 7-in csg 3460, top chalk 3503, replaced one joint leaky csg near surface, swabbed down to 2900 ft, slight show of oil and gas, will swab to bottom. W. B. Hinton's Weigand 1, in Donovan sur No. 124, 14 mi e Campbellton, lcn. Helvetia Oil Co.'s Susie Pratt 1, 1400 ft nwl, 1000 ft nel of 176-ac tr in J. de la Garza sur No. 46, lcn.

BASTROP COUNTY—Howell & Appleton's Herman Klemm 1, Richard Teal sur, sd 1229 ft. Marts & Beavens' Parkford & Jenkins 1, center lot 24, Bastrop Town tr, sd 650 ft, in fresh water sand. J. E. Mills' C. O. Randle 1, 100-ac tr, B. Brymer sur, 4 mi se Cedar Creek field, td 2440 ft, set 5 3/16-in csg at 2228, acidized with 1000 gals 2266, tested dry, washing to bottom.

BEE COUNTY—Geo. M. Church et al's C. A. Ray 1, Anna Burk sur, 2 mi e Beeville, testing 4410 ft. Lonnie Glasscock's Holzmark 1, J. A. York sur, abt 1850 ft w Holzmark field disc well, coring 3400 ft. Fred Haworth, Jr.'s J. E. Copeland 1, Obed Marshall sur, 3½ mi nw Pettus, DST of sand 3465-71, 12 min show 350 lbs. gas slight show of sw, td 4252, pb and set csg 3523 ft, tested gas and sw through perf 3460-69 ft. Howeth & Swiger's C. A. Voss 1, Samuel May sur, Ab 230, 2½ mi sw West Tuleta field, set surf csg, woc. Luling O&G Co.'s B. B. Ruhman 2-A, 2750 ft sel, 900 ft swl of J. M. Thurston sur, coring 3160 ft. Marine Oil Corp.'s J. C. Woods 1, 427-ac tr, J. Ryan sur, disc well, Beeville field, td 5831 ft, reinstate to re-work, now ru. Nichols & Quinn's J. R. Scott 1, blk 7, Howeth & Swiger sub, Uranga gr, sp and sd. H. A. Pressey's R. T. Hicks 1, 1120-ac tr, Jose M. Uranga gr, ab 568, 4½ mi s of Normana, sand 3482-87, broken sand, shale and shells 3487-3502, 12 min DST 3482-3502, show 350 lbs dry gas, 90 ft mud, cored ahead to 3568 and reamed to 3526, tested 3526-68 show 2 fourbles mud and very litle gas, now arranging for csg.

BEXAR COUNTY—American Gas Co.'s Oliver No. 5, 400-ac tr, M. F. Rodriguez sur, Gas Ridge, td 3079, ran 5 3/16-in csg to 2990 ft, cleaning out 80 ft corings. Carter & Ingersoll's Louis Mann 1, 60-ac tr, John Christopher sur, 3 mi s Von Ormy, dr 1084 ft. Joe Deupree's Mrs. R. S. Nina (R. S. Coffey) 1-A, Rodriguez sur, 7 mi s San Antonio, td 1200 ft, recemented csg at 1059, did not hole, ran 3-in tubing, sd. S. G. Winter 1, 100-ac tr in Fernando Rodriguez sur, 1 mi w of Russell, td 1853, pb and testing 1404-65, set 6⅝-in csg 1285 ft, sd. H. J. Moore's Mrs. Lena Eisenhauer 1, 80-ac tr in Gertrude Rodriguez sur, 9 mi ne of San Antonio, dr 1020 ft. O. M. Owensby's Minna Coreth 1, 284-ac tr, Adam Stafford sur No. 49, E. Eckert field, still sd 1091 ft. H. B. Schumacher's Hilda Gillette 1, 49-ac tr, M. G. de Alamiz sur No. 20, 7 mi s San Antonio, td 712 ft, lowering 6-in csg to 600 ft. F. M. Shaver's A. W. Bitter 2, Jose Baerrera sur No. 58, 2 mi nw Von Ormy, dr 1039 ft. Fred Thorman's A. L. Salm 1, 330-ac tr, Hays sur No. 3, 2 mi s Martinez 1, dr 1200 ft. R. P. Whitfield et al's Col. John Sweeny, 340-ac tr, GH&SA RR sur, 11 mi sw San Antonio, dr 493 ft. Woodward & Hardie's R. W. DeVilbiss 1, John W. DeVilbiss sur, Austin chalk test, dr 1485 ft in shale.

BROOKS COUNTY—The California Co.'s B. Garcia 1, tr No. 3, Las Mestinas de Gonzalina gr, Alta Mesa dist, sd for orders 7500 ft. Fairway Prod. Co.'s Wm. Singer 1, 1530 ft sl and el of sur 312, 1500 ft sw disc, lcn. Pedernal Oil Co.'s Wm. Singer 1, nw¼ sw¼ sec 436, Alta Verde, td 1003, ran electric formation test, showed 900 ft sand, dry and abd. Starr Dev. Co.'s Wm. Singer 1, 185 ft sl, 210 ft wl sec 436, abt 700 ft se disc, dr 500 ft.

CALDWELL COUNTY—J. J. Elam et al's Francis-Brown-Cochran 1, W. F. Young sur, 5 mi e Luling, dr 695 ft shale and boulders. W. C. Jennings & Whittington's McMahan 1, James Pinchback sur, se Lockhart, 5 3/16-in csg at 1995 ft, acidized with 2000 gals, td 2343, pb to 2290 in Eagleford, will acidize.

CALHOUN COUNTY—Continental Oil Co.'s Vandenberg 1, sec 12, blk "H," Pedro Garcia sur, 1 mi north of other heaving shale wells, Seadrift prospect, set 200 ft 20-in csg, 1520 ft 16-in csg, dr 3120 ft in shells. Humble Oil & Refining Co. & Plymouth Oil Co.'s E. H. Welder 2, 466 ft sw of RR, 520 ft nwl of Jose Maria Rios sur, mir. Matagorda Oil Corp.'s (Hilton & Miese) J. Brundrett 1, in Wm. Little sur, set 502 ft of 16-in csg.

DEWITT COUNTY — Southwestern Dev. Synd. Ltd's W. L. C. Poetter 1, 590-ac tr in Obed Marshall sur, 1320 ft w Slick field disc well, lcn. Universal & Gillespie's Schubel 1, C. Fitzgerald sur, abt 2 mi nw Yoakum, sd 1370 ft.

DUVAL COUNTY—Atlantic Oil Prod. Co. & Darby Pet. Co.'s J. F. Welder Hrs. 1-G, 120-ac tr, sur 102, ¼ mi sw Seven Sisters field, td 2430, oil sand 2422-30, setting csg, top sand 2413, comp 292.38 bbls day ¾ choke. Mills Bennett Prod. Co.'s W. R. Peters 2, 330 ft sl and wl of sur 178, sp. Cabildo Oil Prop. Inc.'s C. S. Tinney 2, sur 8, and 375 ft se No. 1, s edge of Piedras Pintas salt dome, sd 3450 ft, repairing broken sprocket. Conservative Oil Co.'s DCRC 1, nw¼ sur 51, sw of Gov't Wells field, dr 1100 ft. Dulce Oil Co. & Harvey & Henderson's Hagist 1, sur 291, ½ mi w prod, mim. Gifford Oil Co.'s A. S. Roach 1, sur 200, ru. Frank J. Gravis et al's Gravis et al 1, sec 250, 9 mi w San Diego, td 5150, pb 4500 ft, set whipstock, dr in sdtr hole 4680 ft. Magnolia Pet. Co.'s Peal 1, in sur 383, td 2121, sand 2114-19, DST 2114-21 developed 425 ft plo, 11 min ¾ choke, set csg. M. D. Mastin's D. Ruiz 1, sur 128, 1 mi w Hoffman field, fsh for ds 3003, ran electric formation test, set csg abt 2700 ft, to perf above sand 2604-32. W. C. McBride Inc.'s C. & A. B. Cuellar 1, sur 123, 1 mi w Hoffman field, sd 450 ft. Navarro Oil Co.'s W. R. Peters 1, w 380-ac sur 39, n of Kohler field, ru. John J. O'Hern's L. B. Carrillo 1, 1980 ft nwl, 2069 ft swl sur 192, 4 mi s Hoffman field, lcn. Randon Oil Co.'s South Texas Bank & Trust Co. 1, lot 23 in Central Securities sub, Diego Ynojosa gr, w of Realitos, dr below surf csg. Rogers & Rogers' Rita S. de Pena 1, 3337 ft swl, 1306 ft swl of R. S. de Pena plat, El Mesquite Trinidad Vela gr, dr 1100 ft. Shell Pet. Co.'s J. F. Welder Heirs 1-A (second hole), 80-ac lse, sec 103, dry and abd 3188 ft. Smith & Hamill's Juan Benavides 1, at intersection of blks 11, 12, 15 and 16, subd 1, Juan Benavides lands, El Mesquite gr, ru. Stanolind O&G Co.'s Ira G. Yates 4, sec 560, ½ mi s

discovery well, Labbe field, gas sand 2446-51, td 4054, set 7-in csg 2478 ft, will perforate. Starr Development Co., Inc.'s J. B. Peal, nw¼ sur 796, 1 mi ne Lopez, lcn. Stover's W. J. Hester 1, nw¼ sec 47, west outpost Gov't Wells, set 23 ft sur csg and sd. The Texas Co. & Ohio Fuel Oil Co.'s DCRC 2-B, sur 193, w of Sarnosa field, dr 2331. Windsor Oil Co.'s W. R. Peters 2-B, 990 ft sl and 330 ft el sur 34, 2 mi n Kohler field, td 2799, comp 900 pounds gas well with spray of oil, sand 2578-2615, 5-in csg set 2654, perf 2600-2615.

FAYETTE COUNTY—Ben G. Barnett's Sandy McKinnon 100-ac tr, Adam Zumwalt League, 10 mi nw Flatonia, cored shale 3405-10, td 3547, dry and abd.

FRIO COUNTY—Amerada Pet. Corp.'s Halff & Oppenheimer 7, B. J. Gilman sur, Pearsall, td 3926, pb to 3912, testing in pb hole at 3915. Amerada Pet. Corp.'s Arthur Michael 2, 466 ft out of nw cor of lse, offsetting No .1 Michael, bldg dk; C. A. Miller 1, 466 ft out of ne cor of 394.3-ac tr in B. Satello sur No. 323, ru; W. H. Smith 3, w offset to No. 5 Halff & Oppenheimer, bldg dk. T. Davis et al's Halff & Oppenheimer 1, J. D. Clara sur No. 336, 1 mi ne Pearsall deep production, sd 5433 ft, top chalk 5330, csg 5337. Midland Oil Co.'s San Antonio Joint Stock & Land Bank 1, 60.8-ac tr, J. C. Woodward sur No. 2, 1 mi s of Pearsall townsite, to deepen from 4069 ft. Termo Co. of Texas' A. L. Arp 1, 102-ac tr, Blair sur, 4000 ft w Pearsall prod, dr 5000 ft.

GOLIAD COUNTY — Keystone Royalties Co.'s C. B. Wood 1-A, 10,500 ft sw and 3229 ft se of n cor of Rios sur, 3 mi e Berclair, owdd, td 6712, ru to wo. Zeni Oil Co.'s M. Lutenbacher 2, sw¼ of blk 25, Goliad town tr, sp.

GONZALES COUNTY—Tull et al's Roska 1, 61.2-ac tr, B. McClure sur, sd 2050 ft.

GUADALUPE COUNTY—J. E. Clark's E. W. Williams 1, Green DeWitt sur No. 13, 4000 ft sw S. Darst Creek, top Austin chalk 2358 ft, set 6⅝-in csg at 2357 ft, td 2509, treated with 1000 gals acid, pb to 2495, ran tubing. Clark & Weinert's Anderson 1, Green DeWitt sur No. 11, 6 mi s Kingsbury, did not sdtr but dr by slips, ru whipstock at 2187, dr 2230 ft. Louis Crouch's J. Getzke 2, 188-ac tr, 330 ft n No. 1, J. F. Clements sur, sd 480 ft. Frank Zoboroski 1, 70-ac tr, J. D. Clements sur, Zoboroski, td 2722 ft, pumped 8 bbls oil with water, will recement csg. Eickenrogt & Gallagher's O. H. Jahns 1, 840-ac tr, Green DeWitt sur, 3 mi sw South Darst Creek, td 3134 ft in Buda, top Buda 3089 ft, prep make DST at 2950 ft. Pat Armstrong's J. Z. Fulcher 3, Robt. Smith sur, 2 mi sw Prairie Lea (was Jim Harper et al) td 2477, reinstatement, bailed hole dry, will ru to pump, showing some oil, sd. W. J. Walton et al's W. F. Krueger 1, H. Branch sur, just n Zoboroski area, set 7-in csg at 2173 ft, top chalk 2166 ft, td 2314.

HIDALGO COUNTY—Gerald O&G Co.'s Nelson Mortgage Co. 1, blk 38, lot A, La Blanco Agricultural sub, 4 mi s city of Donna, td 6237, dry and abd. Gulf States Oil Co.'s J. C. Engleman 3, lot 3, blk 70, Las Mestinas gr, 700 ft e of Mestinas field disc well, gas sand 6265-73 ft, sand with light show of oil 6706-29, with oil show 6743-60, set 7-in csg 6764 after running electric formation test perf 6820-35, tested sw, pb and perf 6688-6899, show 675 pounds pressure with spray of water through ¼ choke, killed, reperforated 6720-25, flowed sw, pb at 6709, will perf for 4th prod test in sand 6688-98 ft. Maxwell-Mundy-Morris' Southland Dev. Co. (Hidalgo County Water Control & Impr. Dist.) 2, lot 11, blk 20, Alamo Land and Sugar Co. sub, Alamo gr, 4 mi s Alamo, td 725 ft, perf csg 650-56 ft, bailing, slight oil show, electric formation test showed sand 507-15, 636-660, pb to 679, 6⅝-in csg at 673, sd. Quintana Pet. Corp.'s John C. Engelman 1, lot 10, blk 94, la Mestenas gr, 4 mi se Mestenas field, td 8904, dk pulled in, rebldg dk. Dayle L. Smith Oil Co.'s Fairbanks & Young 1, blk 44, porc 46, Reynosa Juris, 4 mi e Samfordyce field, td 1856, washing hole after fsh out 19 joints lost ds at 1865 ft. Union Sulphur Co.'s ARGL&I 7, tr No. 2309, blk 59, 4000 ft e Mercedes field, td 7608, 5-in csg 7530, swabbing through perfs 7540-49 ft, perf csg with 23 shots 7530-34 swabbing; ARGL&I Co. 8, lot 2120, blk No. 87, N. Capisalle Dist, N .Mercedes field, td 7822, 5-in csg 7822, pb to 7590, test at 7790 unsuccessful, pb 7500 ft, making fourth prod test at 7500 ft; ARGL&I Co. 9, Farm tr 2268, blk 59, N. Capisalle Dist, ½ mi e Mercedes disc well, coring 7600 ft in shale. Yates McCurry's Southland Dev. Co. 1, lot 13, blk 24, Alamo sub, 2½ mi s of Alamo, sp and sd.

JIM HOGG COUNTY—J. J. Cosner's E. Vela Heirs 1, 330 ft sl and el of blk 5, Blark & Cowder sub, of sur 571-572, sh 1, El Peyote gr, 4 mi e Henne-Winch Farris field, lcn. Theo Hicks et al's Kohler 1, blk 9, sub Noriacitas gr, lcn. Knode et al's J. C. Saunders 1, corners of blks 18, 19, 30 and 31, sec 17, R. Holbein sub, share 3, Las Animas gr, dry and abd 3750 ft. Magnolia Pet. Co.'s Magnolia-Holbein 1, sur 36, Villareal sub, Agua Nueva de Arriba gr, dr 1478 ft.

JIM WELLS COUNTY—Gist & Graddy's B. W. Owens 1, nw Bentonville field, Poitevent sur, dr 1927 ft; J. Bennett 1, lot 87, sec 76, Holdeman sub, 2 mi w Premont field, dr 1100 ft. E. M. Jones' R. Adams 1, se cor of blk 47, Waldron O&G sub of Robert Adams Ranch, 1½ mi w of town of Alfred, dr 3065 ft. La Jita Corp.'s W. E. Pope 1, se cor of sec 20, dr 2382 ft. Stanolind O&G Co.'s Frame & Bowers 1, sec 14, King Ranch sub, 1 mi n disc well, reinstated, ru; J. J. Thompson 1, ne¼ of sec "A," King Ranch, 150-ac tr, set 600 ft surf csg, woc; E. W. Raney 1, ne¼ sec 16, King Ranch sub, w offset disc well Bentonville field, dr 4570 ft. Texon Royalty & Lucey Pet. Co.'s Leona Dodd 1, sec 15, King Farm lots, nw offset disc well Bentonville, DST 5717-21, showed small amount gas, coring 6100 ft. Joe E. Walsh's W. D. Wade 2, lot 2, blk "C," Bode sub, Sandia area, temp abd 1200 ft.

KARNES COUNTY — DeGraffe & Reele's Cochran 1, McConnell League, 5 mi ne Riddleville, ru and sd. Hickman et al's R. L. Barnett 1, beginning at the s cor of Alex Hunter sur, thence ne along sur line 6900 ft, then nw at rt/a 1300 ft, set sur csg. Worth Oil Co.'s E. Hysaw 1, 1069.8-ac tr, Don Erasmus Seguin gr, w of Kenedy, set sur csg.

KERR COUNTY—Auld & Evans' I. R. Heffner 1, sec 13, BS&F sur, 25 mi nw Kerrville, td 2800 ft, set 8-in csg at 2020 ft, sand 2430-80 ft, flowed 3 bbls sw per hr, underreaming 10-in csg, td in black, shaley slate.

KIMBLE COUNTY — Dr. B. R. Thomas' Rust 1, sw¼ sec 47, BS&F sur, 13 mi nw Junction, lcn.

KLEBERG COUNTY—McCork & Daybault's Killam 1, lot 7, sec 53, DT&I sub, 5 mi se Recardo, lcn.

LASALLE COUNTY—Davenport & Talbot's G. Watkins, sur 103, 25 mi e Encinal, sd 2830 ft. Kennedy & Johnston's Gilmer & Wildenthal 1, 140-ac tr in sur 283, mim. Paul Meaders & Adair et al's Reed 1, sec 136, T. Conlan sub, 15 mi e and 10 mi s of Cotulla, fsh for ds 2792 ft.

LAVACA COUNTY—J. D. Aguier et al's No. 1 A. A. Staffa, W. R. Hensey sur, 5 mi s Schulenburg, abd 2998 ft. Goode & Mayton's M. Schaeffer et al 1, 481-ac lse, W. R. Hensley sur, lcn.

LIVE OAK COUNTY—Dirks Bros.' A. E. Nichols 1, S. Ryan sur, dr below surf csg; George West Est. 1, 80-ac blk, Geo. West, 1 mi n townsite, dry and abd 4006 ft. Adolph Douvre's San Antonio Joint Stock Land Bank 1, 725 ft el, 150 ft nl, plat 27, Tips subd in Richard Everett sur, bldg dk. R. H. Feltner et al's John T. Carter & Bros. 1, sec 319, T&T Ry Co. sur, sw portion of county, td 3466 ft, set new whipstock at 2818 and dr 3480 ft in sdtr hole. Inter-Allied Pet. Corp.'s Aetna Life Ins. Co. 1, J. Poitevent sur, 49.47-ac tr, 6 mi ne Dinero, sd with dk up. J. J. McRoberts et al's J. D. Mahoney 1, 142-ac tr in Thomas Henry sur, 3 mi w Three Rivers, sp. Odgen & Reed's D. C. Reed 1, Clegg Ranch, sw part of county, dk and sd. T. T. Quinn's E. Terrell 1, J. Houlihan sur, 1½ mi ne Whitsett, sd 1080 ft, for orders. Windsor Oil Co.'s B. E. Stolte 1, center tr 9, J. Ingram sur, Ab-261, sp.

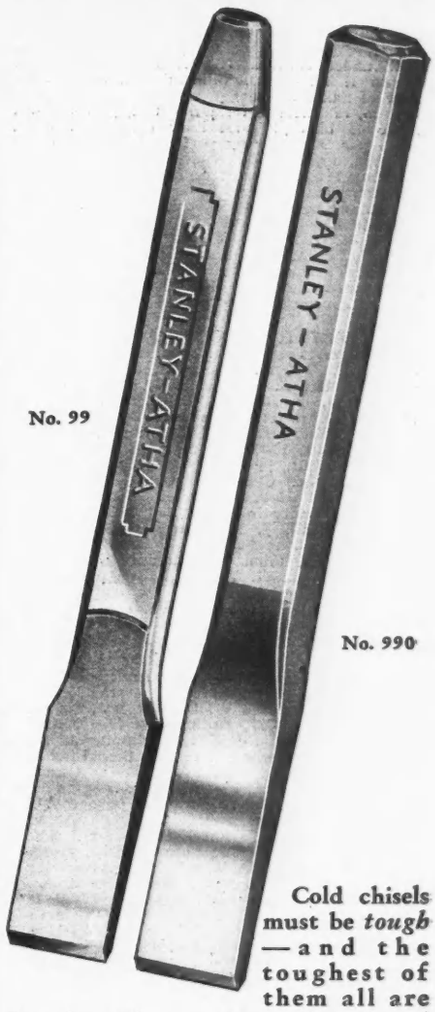
MAVERICK COUNTY—Thomson & Streeter's Joseph Wipff 1, sec 18, 7 mi w Chittim field, 10 mi n Eagle Pass, sd 220 ft.

McMULLEN COUNTY—Dan Culver & G. C. Richardson's Wm. Fehler 1, G. Pittuck sur, w Calliham, lcn. Daybault's Matula 1, 100-ac James Garner sur, 2½ mi sw Calliham, sd 1018 ft. R. J. Hill et al's Richardson 1, sur 158, 15 mi sw Tilden, sd 595 ft, corrected depth. Humble O&R Co.'s Rhodes 1, s offset disc well, td 1807, sand 1795-1807, DST recovered 500 lbs gas pressure 10 min, ⅜ choke, set csg 1780 ft, woc. Ranier Oil Co.'s Hagist 1, se¼ of sur 25, mim. Reliance O&R Co. & Santa Clara Oil Co.'s Shiner Est. 1, nw¼, w½ sec 80, Shumway sub, dry and abd 2540 ft. C. C. Shumway's Shiner Ranch 9, ne¼ sec 51, Shumway sub of Shiner Ranch, mim. Whisenant & Trenchard's Roos Bros. 1-A, ne¼ sec 60, 1¼ mi sw Magnolia's Kincaid 2, dr 1500 ft.

MEDINA COUNTY—Frank A. Brown's Mary Winn 1, John Ward sur, dr 1063 ft, sandy shale. R. S. Bynum's Melton 1, 160-ac tr, sur 14½, dr 960 ft. W. C. Campbell et al's (Ed Falvey et al) McMenemey 1, sur No. 331, G. Pittuck sur, 4 mi se Devine, sd 2892 ft. N. C. Johnson's Taylor 1, 320-ac tr, sur 136, lcn.

NUECES COUNTY—Coastland Oil Co. & Keystone Royalties' (Paul Benedum et al) Page Bros. 1, s 50-ac share 2, Geo. Franks sub, 3300 ft w of prod, owdd, old td 5856 ft, sdtr hole, went into old hole, washed down to 2560 ft, now at 5928 ft, core 5849-48, no recovery; sw sands 5848-59, 5859-86, sandy shale 5886-92, red shale 5892-96, coming out with sand core 5910-28, prep abd. B. L. Blanchard's T. H. Isensee 1, blk 8, R. Shaeffer lands sub, 1½ mi w Clarkwood townsite, reaming 4150 ft. J. T. Cox's John Harvey, share 11, Harney lands, Gregoria Farias gr, 2½ mi se Callahan, sd 2085 ft. M. F. Hurlburt's J. C. Phillip 1, center lot 9, 20-ac tr, sur 48, Flour Bluff Encinal Garden Tracts, 9½ mi se Corpus, sand 6629-35 ft, DST 6628-35 show 250 lbs pressure 9 min, ¼ and ⅜ choke, used 1000 ft fresh water cushion, show no oil,

TOUGH!



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carried distillate odor, top Discorbis either 5335 or 5418, Heterostegina 6036, Marginulina 6325, td 6784, reaming 200 ft rat hole. W. P. Hinds' Edwin Flato 1, center blk 8, sec 107, 1½ mi sw Clara Driscoll field, sd 3880 ft for repairs. O. W. Killam's Betty Ellich 1, 86.28-ac tr, sec 109, Pauls sub, 4000 ft sw Clara Driscoll field, running electric formation test 3817, cap 3811-13, sand 3811-17 ft, td 3822 ft in shale, 7-in csg set on bottom, drilled ahead to 3899, gas sand 3872-99, set short string on bottom, blew out while attempting completion, made 3500 bbls sulphur and 1500 bbls oil and many million cu ft gas, now under control. H. M. Reed's Katherine Quinn 1, 19.6-ac tr, Villareal sur, about 3300 ft w of Saxet Heights prod, td 4117, set csg on bottom, ran electric formation test, perf 4069-73, made 45 bbls plo first hour then went dead, made gas, recementing perfs, reperforate, comp 176 bbls day ⅛ choke (potential). G. M. Richardson's Wm. Gerhardt 1, 208.65-ac tr, sec 79, Geo. H. Pauls sub, A. F. de la Fuente sur, abt 2½ mi ne Agua Dulce field, dr 5900 ft, prep abd. Southern Minerals Corp.'s Rand Morgan 2, lot 42, Artemus Roberts sub, AB&M sur, sec 411, Saxet, 9200 ft nw 5800 ft prod, coring 5300 ft. Terminal Oil Products Co.'s R. V. Thurman 1, sw¼ sec 10, Flour Bluff Garden Tracts, Rincon del Oso gr, sd 3566 ft for title work.

SAN PATRICIO COUNTY — Benedum & Trees' Mrs. E. H. Welder 2, sec 19, Welder Ranch sub, 3½ mi ne Sinton, dr 6788 ft, gas sand 6470-80; E. H. Welder 3, sec 19, Welder Ranch sub, dr 2850 ft. C. B. Bunte's W. C. Mayfield 1, tr 11, Roos sub, 2 mi n White Point field, sd because of litigation. Cage Prod. Co.'s Mayo 1, 150 ft sl and wl of 60-ac in Joe Fressenden sur, ½ mi nw of prod, td 307, set surf csg, woc. Centennial Oil Co.'s Chiltipin Creek 2, 640 ft s, 47 degrees e of Plymouth No. 23-C Welder in Creek Bed tr No. 4, mim. O. W. Killam's J. F. Green Est. 1, 150 ft el and nwl of 782-ac Farm in R. Ross sur, 1½ mi sw Taft field, mim. Joe Lundin & Rowan & Hope's Mrs. E. H. Welder 1, sw¼ of sec 20, Welder Ranch sub, 2½ mi sw St. Paul, sp. Plymouth Oil Co.'s E. H. Welder 2-D, 466 ft nl and el sec 4, Welder Ranch sub, lcn. Portilla Oil Co.'s E. H. Welder 1, sec 5, Welder Ranch sub, dr 4993 shale, sand, lime.

STARR COUNTY—J. F. Anderson's Yzaguirre 1, 139-ac tr, porc 79, coring 1535 ft. Bishop & Henshaw's W. D. Martin 1, 660 ft sl, 3803 ft wl sur 627, ru for 3500-foot contract. Porter & Evans' SCCC 1, beginning at State Highway No. 4, where it crosses the wl porc 89, thence s along wl porc 89, 13,000 ft thence e at rt/a 500 ft to lcn, lcn. Killam & Stagg's S. D. Ricaby 1, 150 ft s Highway 4, porc 83, Carmargo Juris, 3 mi e Rio Grande City field, junked and abd 1556 ft; S. D. Ricaby 2, 150 ft sl, 200 ft wl Ricaby tr, porc 83, 1000 ft south No. 1, ru. Larkins & Warr's Kelsey Bass 1, lot 8, Coastal sub, porc 87, Barbacosa area, dr 2900 ft. Ed Leach's Wood Est. 1, 2100 ft n Rio Grande, porc 84, 3 mi se Rio Grande City, td 2740, ran third electric formation test, abd. Ed Leach's Wardner Trustee (Dona Est., Inc.) 1 (was A. J. Weyel No. 1), 431 ft sl, 244 ft el of 160-ac tr, porc 84, td 2149, reinstatement, dr out cement attempting to circulate and get on bottom. Otto W. Woods' H. P. Guerra 1, lot 35, Conroe sub, porc 50, Mier Juris, dr 250 ft.

TRAVIS COUNTY—Albrecht & Brindrueger, Sr.'s M. C. Swenson 1, 75-ac tr, L. Kimbro League, sec 5, Kimbro area, dry and abd 1280 ft. W. F. Johnson's Eliha Beery 1, center lot 1, lot 14, Granview sub, division B, city of Austin, lcn. Sal-Mar Oil Corp.'s P. Carlos 1, M. W. Smith sur, 4 mi n Kimbro, lcn.

WEBB COUNTY—French Oil Corp.'s S. Benavides 1, sec 2254, 3 mi n Oilton, dr 450. Illinois Pet. Co.'s J. H. Kirkpatrick 1, se cor of nw¼ of sec 16, CCSD&RGNG RR sur, nw of Lopez field, ran electric formation test and abd, td 2302, sw sand 1815-23, sw sand 2220-27.

WILLACY COUNTY — Shell Pet. Co.'s Yturria Land & Cattle Co. 1, most southerly se cor of sec 64, San Juan de Carritos gr, La Sal Veja prospect, pb to 4600 ft, dr 4950 ft in sdtr hole.

WILLIAMSON COUNTY—James H. Holdeman et al's Amor Forwood 1, 160-ac tr, HT&B Ry. sur, sec 4, sur 14, dr 960 ft in shale. Fred Hughes' M. Bachmayer 1, C. C. Browning sur No. 28, 12 mi se Taylor, dry and abd 1200 ft. W. H. Moody's J. V. Stiles 1, 230-ac tr in J. Bevil sur, lcn.

WILSON COUNTY—Otto Hierholzer's E. M. Hierholzer 1, R. Salinas sur, 12 mi sw Florresville, lcn. A. G. Reimenschneider's Lon Harrell 2, 209-ac tr, Manuel Baerrera sur, 5 mi s of Florresville, sd 740 ft.

ZAPATA COUNTY—Ivan Howard et al's Y. Martinez 2, blk 1, sur 241, dr 1400 ft. George Buck's Haynes 1, blk 4, A. D. Haynes sub, Comitas & Villa gr, td 904, sand 879-904, 6⅝ csg 879, completing. R. A. Mitchell's P. Bustamante 1, share 32, Fansler Partition, Comitas gr, Escobas area, dr 500 ft. J. J. Perren's Uribe 1, blk 31, Perren sub, sd 485, San Ygnacio sub, Borrego gr, 12 mi ne San Ygnacio, prep to spud.

ZAVALLA COUNTY—Bay Oil Corp.'s Nat'l Bank of Commerce 1, sec 43, blk "A," AB&M sur, 16 mi se Batesville, td 5828 set 7-in csg at 5724, dr plugs, circulating and will core. W. L. Bridges' E. B. Flowers 1, sec 19, blk 1, I&GN RR sur, sd 450 ft. Frank Buttram et al's Whitecotton 1, B&M sur No. 1, coring 5479 ft, core 5360-64 showed Glavconite, top chalk 5281 ft. Leona Oil Corp.'s George West 1, C. Bustillo sur No. 1, top chalk 5760 ft, still sd 6020 ft, contract depth.

WEST TEXAS

ANDREWS COUNTY — Grisham-Hunter Corp. et al's Ratliff-Bedford 1, c nw¼ sec 24, blk 73, PSL sur, cellar and pits. Humble O&R Co.'s R. M. Means 7, near c se se sec 15, blk A-20, PSL sur top anhydrite 1866 ft, top salt 1914 ft, testing 4536 ft; J. S. Means 8, c se ne sec 19, blk A-35, PSL sur, rig.

BORDEN COUNTY—John I. Moore et al's Clayton-Johnston 1, se¼ sec 20, blk 32, T&P Ry. sur, T-4-N, lcn.

BREWSTER COUNTY—Floyd C, Dodson et al's Texas American Synd. 1-A, c ne ne sec 66, blk 10, GH&SA Ry. sur, deep test, elev 4228 ft, ur 2040 ft.

COCHRAN COUNTY—Honolulu Oil Corp-Cascade Pet. Co.'s T. B. & R. F. Duggan 1, c labor 13, league 55, Oldham County School Land sur, sd 232 ft.

CONCHO COUNTY—Walter C. Nelson et al's Jim Rice 1, c nw sw sec 13, blk 70, H&TC Ry sur, elev 1975 ft, dry and abd 1974 ft. John W. Westbrook Co.'s C. C. Ledbetter 1, sec 2, blk 65, H&TC Ry. sur, A-1673, elev 2000 ft, ur 2560 ft.

CRANE COUNTY—Big Basin Pet. Co.'s Jax Cowden 1, nec nw ne sec 77, blk "X," elev 2456 ft, top salt 548 ft, sd 2602 ft. Clark-Cooper & Smith's A. P. Jordan 1, nec 160-ac lse, sec 12, blk B-22, PSL sur, machine. Steve Currie et al's TP Land Trust 1, swc se¼ sec 33, blk 44, T&P Ry sur, T-3-S, dr 750 ft. A. R. Eppenauer and A. H. Livingston's Livingston 1, sec 13, blk 6, H&TC Ry, sur, Ordovician test, lcn. Gulf Oil Corp.'s W. N. Waddell et al 2, c ne sw sec 18, blk B-21, PSL sur, Ordovician lime test, elev 2620 ft, top sand 1620 ft, dr 3100 ft; M. B. McKnight 2, c ne¼ sec 9, blk B-21, PSL sur, mim. Gulf & T. B. Cranfill's J. B. Tubb 2, nec sec 12, blk B-27, PSL sur, top anhydrite 455 ft, top salt 500 ft, dr 3500 ft. Humble's J. B. Tubb 2, c se nw sec 11, blk B-27, PSL sur, elev 2562 ft, top anhydrite 400 ft, top salt 630 ft, lime pay 4280-4375 ft, used 3000 gals acid and flowed 1025 bbls initial; Tubb 3, swc sec 10, blk B-27, PSL sur, rig. Loffland Bros. et al's J. B. Tubb-Gulf 1, c nw¼ sec 9, blk B-27, PSL sur, elev 2540 ft, top anhydrite 428 ft, salt series 495-1285 ft, top brown lime 2478 ft, sd 4510 ft; Tubb-Gulf 2, sec n½ sec 9, rust. J. E. Lucas et al's R. S. Pershing sec 1, blk 31, H&TC Ry sur, machine. John I. Moore et al's T. C. Barnsley 1, c sw sec 43, blk 32, PSL sur, Ordovician lime test, elev 2472 ft, top anhydrite 500 ft, top salt 680 ft, top brown lime 2505 ft, 1st sul w 4555-60 ft, dr 4775 ft. Rider and Pershing's N. S. Thaxton 1, e¼ sec 2, W. T. Wilkenson sur, sp and sd. Sinclair Prairie and unit members' J. B. Tubb-California 1, sec sec 3, blk B-27, PSL sur, elev 2540 ft, est 3 bbl pumper at 2962-3164 ft, td 4466 ft, used 2000 gals acid and flowed 116 bbls oil daily, used 3000 gals acid, and flowed 9 bbls hourly. L. R. Stroud et al's J. Mosley 1, sec 4, blk 31, H&TC Ry sur, elev 2373 ft, top anhydrite 525 ft, top salt 820 ft, sd 1902 ft. Tide Water Oil Co.'s W. P. Edwards 1, swc nw¼ sec 2, blk B-23, PSL, dr 2310 ft.

CROCKETT COUNTY—John I. Moore et al's A. C. Hoover 1, sec sec 4, blk "FF," B&B sur, sd 1255 ft.

JEFF DAVIS COUNTY—C. M. "Dad" Joiner et al's Jones-Coffield 1, ne¼ sec 8, blk 3, H&TC Ry sur, dr 4085 ft.

DAWSON COUNTY — Harry Adams, Fred Turner and Ray Albaugh's John Robinson 1, c nw¼ sec 46, blk M, EL&RR sur, elev 3085 ft, top salt 1970 ft, top lime 4580 ft, dd fr 4862 ft, dr 5050 ft.

ECTOR COUNTY — Broderick & Calvert, Inc.'s H. C. Foster 1, nec n½ se¼ sec 13, blk 43, T&P Ry sur, T-2-S, sp. W. H. Dunning, Jr. et al's H. E. Cummins 1, nec se¼ sec 33, blk 45, T&P Ry sur, T-1-N, elev 3220 ft, top anhydrite 1440 ft, top salt 1480 ft, top Yates 2760 ft, top lime 3820 ft, lime pay 4214-4252 ft, flowed 405 bbls natural. Grisham-Hunter Corp.'s R. B. Cowden 1, c nw sw sec 10, blk 45, T&P Ry sur, T-2-N, cem cas 139 ft; Cowden 2, c se¼ sec 8, blk 45, T&P Ry sur, T-2-N, dr 460 ft. Gulf's C. A. Goldsmith-Scharbauer 5, ne¼ sec 22, blk 44, T-1-S, dr 4135 ft; Goldsmith-Scharbauer 6, nec nw¼ sec 4, blk 44, T-1-S, elev 3153 ft, top anhydrite 1461 ft, pb fr sul w at 4243-4260 ft, to 4225 ft, shot 140 qts 4158-4213 ft, flowed 546 bbls initial, used 5000 gals acid and flowed 612 bbls 11 hrs. Phillips Pet. Co.-Pure Oil Co.'s Clyde Cowden 5, nw¼ sec 23, blk 44, T-1-S, dr 900 ft. Stanolind's E. F. Cowden 1-B, nec sec 14, blk 43, T&P Ry sur, T-2-S, elev 2970 ft, top anhydrite 1720 ft, top salt 1827 ft, top gray lime (est) 3905 ft, pb fr sul w at 4456 ft to 4425 ft, shot 345 qts nitro 4020-4135 ft, testing.

EL PASO COUNTY — Tri-State Oil Co.'s Chas. & L. M. Kinkel 1, nec sec 237, S. F. No. 7232, sd 2230 ft.

FISHER COUNTY—Forest Development Co.'s A. M. Dry 1, near c sw se sec 108, blk 2, H&TC Ry sur, elev 2087 ft, sd 3500 ft. John McKeon, Inc and Ellis & Eubanks' C. C. Wourland 1, nwc sw nw sec 15, blk 21, T&P Ry sur, sp. Tide Water and Merry Bros. & Perini, Inc.'s M. Howard 3, nwc se ne sec 180, blk 2, H&TC Ry sur, testing oil pay 3640-3642 ft.

GAINES COUNTY—Landreth Prod. Corp. et al's W. H. Kirk 1, swc sw¼ sec 22, blk A-21, PSL sur, elev 3271 ft, top anhydrite 1950 ft, salt series 2047-2725 ft trace gas 3331 ft, top brown lime 4021 ft, top white lime 4315 ft, coring oil saturated lime 4707 ft. Humble O&R Co.'s S. H. Eubank 1, c sw sw sec 6, blk AX, PSL sur, rig.

GARZA COUNTY — M. L. Richards et al's U. U. Post 1, nwc se¼ sec 1232, D. L. Phillips sur, A-938, mim. Grisham-Hunter Corp-Brown Eagle Oil Co.'s J. R. Sullivan 1, nw¼ sec 3, S. E. Harper sur, A-1118, dr 615 ft.

GLASSCOCK COUNTY — Bruce Frazier et al's E. Patterson 1, nwc ne ne sec 188, blk 29, W&NW sur, elev 2619 ft, dry and abd 1450 ft. Shell Pet. Corp.'s L. S. McDowell 1, s½ sec 41, blk 34, T&P Ry sur, T-2-S, lcn. M. B. Stanton et al's W. P. Edwards 1, sec nw se sec 11, blk 34, T&P Ry sur, T-2-S, sd 983 ft.

TOM GREEN COUNTY—Spinner Oil Co.'s B. Reed 1, swc sub-div 39, Mayson & Perry sur, dr 2230 ft; D. B. Horn 1, sec 137, Washington Co. Ry sur, machine.

HOCKLEY COUNTY—The Texas Co.'s Bob Slaughter 1, League 38, Zavala C.S.L. sur, lcn.

HOWARD COUNTY—D. C. Reed & C. J. Schmid's Walter Pike 1, c se se sec 24, blk 33, T&P Ry sur, T-1-N, elev 2514 ft, salt series 950-1615 ft, dr 3235 ft. Southern Oil Corp.'s W. P. Edwards 1, swc sec 32, blk 30, T&P Ry, sur, T-1-S, elev 2210 ft, top lime 1750 ft, dry and abd in sul w 2998-3006 ft.

HUDSPETH COUNTY—Haymon Krupp Oil & Land Co.'s S. J. Thaxton 1, near sec ne se sec 34, blk 74, T&P Ry sur, Tsp 6, lowering 12¼-in cas, td 1131 ft. Costello Oil Corp's L. S. Costello 1, swc sw¼ sec 36, blk 70, T&P Ry sur No. 1879, lcn.

JONES COUNTY — Consolidated Oil Co.'s Chas. Hamilton 1, sec 21, blk 4, H&TC Ry sur, mim. Chas. Gyr and S. L. Davis' L. E. Clyburn 1, nec 80-ac lse, sub-div 27, H. Millard sur No. 243, machine. Thos. D. Humphrey et al's J. M. Radford 1, nwc sw sw sec 19, blk 16, T&P Ry sur, dry and abd in sw 2740-43 ft.

LOVING COUNTY—Mason Oil Co.'s Minnie Kyle 2, swc ne¼ sec 20, blk 55, T&P Ry sur, Tsp 1, sp. Porter Rankin et al's W. D. Johnson 1, nw¼ sec 12, blk 57, T&P Ry sur, Tsp 1, elev 2904 ft, top Deleware lime 3119 ft, top sand 3151 ft, testing 3214 ft, making oil and water.

MENARD COUNTY — Wilcox O&G Co.'s Lee Murchinson 1, swc sec 158, abst 1840, elev 2190 ft, dr hfw 3180 ft.

NOLAN COUNTY—N. B. Hall, A. Glenn et al's Georgia Tech 1, sw¼ sec 89, blk 24, T&P Ry sur elev 2330 ft, sd 200 ft.

PECOS COUNTY—Dobbs Oil Co.'s J. M. Rooney 1, near c ne ne sec 12, blk 125, T&St. L. Ry sur, elev 3005 ft, top anhydrite 970 ft, fsh 2060 ft. Lee Pet. Corp-Bruce McKague's

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R. P. Hinyard-Humble 1, swc sec 2, blk 144, T&St. L. Ry sur, sp. Marion O&G Co.'s W. Courtney 5, nwc sec 78, blk OW, T. M. Ry sur, sp and sd. Stanley A. Thompson et al's Elsinore Cattle Co. 1, se¼ sec 53, blk D, GC&SF Ry sur, Ordovician lime test, dr 910 ft. Trans-Texas Oil Co.'s F. M. Gallaher 1, nec nw sec 9, blk 51, T&P Ry sur, Tsp 10, dr 335 ft; Popham Land & Cattle Co. 1, se¼ sec 235, blk 11, GH&SA Ry sur, sd 560 ft.

REEVES COUNTY—F. S. Miller and Frank Babcock's Radford Grocery Co. 1, sec 39, blk 56, PSL sur, elev 3169 ft, co to run 10-in cas, td 720 ft.

RUNNELS COUNTY—Golden Pet. Co.-John Castor's H. Giesecke 1, blk 150, sub-div 3, Jas. Hughes sur, sd 125 ft. Melrose Oil Co.'s Mrs. L. P. Wood 1, nwc 30-ac lse, Willett Holmes sur, No. 100, sd 2926 ft.

REAGAN COUNTY—F. Oyster, R. R. Rhodes & E. R. Bahan's M. H. Chase 1, c ne¼ sec 40, blk 36, T&P Ry sur, T-5-S, elev 2688 ft, top lime 3215 ft, dry and abd in sul w 3525 ft.

SCHLEICHER COUNTY—Cardinal Oil Co.-Rowan-Nichols Oil Co.'s J. A. Whitten 1, c ne nw sec 35, blk L, TC Ry sur, elev 2353 ft, sd repaired, td 4702 ft. Mangus Oil Corp.'s Judkins-Spencer (Pure) 1, c nw¼ sec 4, GC&SF Ry sur, blk V-28, or Hooper-Wade sur, blk A, elev 2209 ft, show gas 4350-70 ft, top Ellenberger lime 5902 ft, dr 6295 ft.

SCURRY COUNTY—C. W. Guthrie et al's T. E. Sorrells 1, sec sec 101, blk 97, H&TC Ry sur, sd 980 ft.

STERLING COUNTY—W. B. Hogan et al's Geo. Richardson 1, sec 110, blk 6, H&TC Ry sur, lcn.

TAYLOR COUNTY—Geo. Callihan et al's S. J. Winter 1, (19.4-ac), sub-div No. 3, Alex Thompson sur No. 20, sd 965 ft.

TERRELL COUNTY—F. C. Bates & J. H. Felps' J. H. Felps 1, sec nw¼ sec 5, G. W. Turley sur, blk A-4, elev 2185 ft, sd 5635 ft.

TERRY COUNTY—J. A. Estes et al's Brownfield 1, sec nw sw sec 23, blk T, D&W sur, mim.

UPTON COUNTY—Brewer & Smith, Inc.'s Cordova Union 1, sec nw¼ sec 19, blk 1, MK&T Ry sur, 1st so&g 2007-10 ft, td 2063 ft, flowing by heads.

WARD COUNTY—C. H. Mahres et al's P. Wilson 1, sec 133, blk 34, H&TC Ry sur, dr 110 ft.

WINKLER COUNTY—Crafton Oil Co. et al's J. B. Walton-Pure 2, swc ne¼ sec 1, blk B-3, PSL sur, lcn; Walton-Pure 3, nwc sw¼ sec 9, blk B-3, PSL sur, dr 1055 ft. Atlantic O. P. Co.-Wahlenmaier Pet. Corp.'s Fred Leck 1-B, nwc nw¼ sec 3, blk 26, PSL sur, dr 2650 ft. Wm. H. Dunning, Jr. et al's B. F. Jenkins 1, swc s½ s½ sec 21, blk 77, PSL sur, dk. R. H. Henderson et al's J. B. Walton-Humble 1-B, sec sw¼ sec 10, blk 26, PSL sur, elev 2868 ft, top lime 2813 ft, lime pay 3035-3045 ft, shot 1340 qts 2811-3045 ft, gauged 1764 bbls 24 hrs ¾-in choke on tubing; R. A. Leck-Gulf 1, nec sec 43, blk 74, PSL sur dk. Humble's J. B. Walton 2-C, sw ne sw sec 34, blk 74, PSL sur, show gas 2760 ft, sd 2767 ft; Walton 3-C, swc se¼ sec 34, mim. Fred Hyer et al's Cowden Cattle Co. 1, c nw¼ sec 8, blk A-56, PSL sur, elev 3082 ft, top anhydrite 1230 ft, top salt 1500 ft, sr 4437 ft. Illonois Oil Co.'s McCutcheon-Conoco 1, nwc sw¼ sec 16, blk B-3, PSL sur, dr 200 ft; McCutcheon-Conoco 1-B, nwc se¼ sec 25, blk B-3, PSL, mim. C. M. "Dad" Joiner et al's Cowden-Evans 1, near c nw¼ sec 46, blk 73, PSL sur, elev 3203 ft, top anhydrite 1580 ft, top salt 1640 ft, top Yates sand 2930 ft, ur 3135 ft. K. D. Oil Co.'s Pink Mitchell 1, nwc s½ ne¼ sec 23, blk B-10, PSL sur, elev 2814 ft top anhydrite 1010 ft, top salt 1070 ft, sd 1150 ft. Shell Pet. Corp.'s R. A. Leck 1, nec se¼ sec 32, blk 74, PSL sur, dr 850 ft. Reed & Duffy's John Sealy 1, nwc sec 8, blk "A," GMMB&A sur, machine. Wahlenmaier Pet. Corp.'s J. B. Walton-Leck 2-C, swc s½ sw¼ sec 3, blk 26, PSL sur, elev 2878 ft, jkd at 2830 ft, skid rig; Fred Leck-Walton 1-D, swc n½ sw¼ sec 3, blk 26, lcn.

YOAKUM COUNTY—E. R. Bahan & R. R. Rhodes' Mrs. Alice Henard 1, c sw¼ sec 367, blk D, John H. Gibson sur, trace gas 1672-1700 ft, cem 10-in cas 2320 ft, td 2394 ft elev 3691 ft, top anhydrite 2279 ft, rust. Lou G. Stogner et al's Googins-Roosevelt 1, sec ne¼ sec 215, blk D, John H. Gibson sur, mim.

TEXAS GULF COAST

AUSTIN COUNTY—W. H. Mitchell's Fenner 1, s of Kenney, I. Fitzgibbons sur, mim.

BRAZORIA COUNTY—Gulf's Fairfield 1, Lockridge prospect, A. Robeson sur, reaming 7884 ft. Texas Gulf Prod. Co.'s Sparks 1, Angleton prospect, Wm. Roberts sur, running an electrical logging device 7525 ft. Strake Pet. Corp.'s Poole 1, Poole Ranch prospect, W. Eggers sur, woc 6739 ft.

COLORADO COUNTY—Sterling O. & R. Co.'s South 1, Garwood area, I. & G. N. sur, sec. 41, rn.

GALVESTON COUNTY—Shell's Stewart 1, Hitchcock prospect, I. Spilman sur, woc 2473 ft.

GRIMES COUNTY—Crooke Brothers et al's Greer 1, near Carlos, P. B. Connor sur, sd 2837 ft.

HARDIN COUNTY—Republic Prod. Co.'s Burrell 2, Silsbee prospect, A. A. Burrel sur, abn 7077 ft. Resource Prod. Co.'s Howth 1, sw of Ariola, A. J. Cotton sur, sd 4437 ft.

HARRIS COUNTY—Amerada-Stanolind's L. Dopsalus 1, Fairbanks-Satsuma prospect, W. C. R. R. sur, Sec. 2, comp. 128 bbls per day ¼-in choke 6866 ft. Zeni Oil Co.'s Perkins 1, Hockley dome, A. Sherrell sur, dr shale 3656 ft.

JEFFERSON COUNTY—H. J. DeArmand's State National Bank 1, ne of Amelia, E. Bigner sur, dr shale 5945 ft. Magnolia's Funchess 1, Cheek area, H. & T. B. sur, No. 6, running electrical logging device 9004 ft. C. B. Megarity's Gardener 1, s of Amelia, S. Stivers sur, lcn. C. H. McSpaddin's Burrel 1, Cheek area, Wm. Smith sur, dr shale 6035 ft. Shell's Carpenter 1, Nome prospect, M. Peveto sur, dr shale 5779 ft. Sun's Broussard 1, Labelle prospect, B. Blackmon sur, milling 7051 ft. C. W. McPhil's Owens 1, n of Port Arthur, sd 2275 ft.

LIBERTY COUNTY—Jack Frazier's Serles 1, Hardin area, A. Green sur, abn 7702 ft.

MATAGORDA COUNTY—John Deering's Estill 1, Cedar Lane prospect, Tone & Jamison sur, fsh 6868 ft. Marathon Oil Co.'s Kountz 1, Midfield prospect, I. & G. N. sur, No. 11, mim. Sun's Craig 1, e flank of Hawkinsville dome, T. Williams sur, perforating 9⅝-in csg at 5150-75 ft.

MONTGOMERY COUNTY—H. W. Blumenthal's Delta Land Co. 1, Dacus prospect, J. Beuhn sur, abn 4011 ft. W. O. Belnoski's Wood 1, Willis prospect, Wm. Weir sur, dr shale 1772 ft.

ORANGE COUNTY—Coker Oil Co.'s Mansfield 1, s of Vidor, J. W. Hill sur, sd 1845 ft. Tide Water's Brown 1, Cow Bayou prospect, M. Latham sur, woc 1106 ft.

POLK COUNTY—Hawkeye Oil Co.'s Harder 1, 2 mi nw of Livingston field, A. Viesca sur, dr shale 3950 ft. Dick Schwab's Kirby Lbr. Co. 2-A, Ace area, T. A. Sublett sur, lcn. Turnbull & Irwin's Roberts 1, Ace area, J. F. De Rumayor sur, dr shale 1800 ft.

San Jacinto County—Jack Frazier's Randolph 1, Evergreen area, Vital Flores sur, dk.

TYLER COUNTY—McArthur & Nixon's Kountz 1, Rockland area, R. Smith sur, woc 65 ft.

WALKER COUNTY—Boone Brother's Tompson Lbr. Co. 1, w of Trinity, Jose Ortego sur, dr shale 384 ft. L. M. Gay et al's Stubblefield 1, w of Trinity, G. Badilla sur, dr clay 50 ft.

WASHINGTON COUNTY—Sun's Lauter 1, Clay Creek, se flank of field, N. Clay sur. dr shale 5859 ft.

WHARTON COUNTY—Smith & McDannald's Presmeyer 1, Lakeview prospect, H. & T. C. sur, No. 10, dr shale 4709 ft. Sterling O. & R. Co.'s A. Genzer 1, East Bernard prospect, J. Scott sur, dr shale 7170 ft.

WYOMING

CARBON COUNTY—General Pet. Corp.'s Union Pacific 1, sw sw nw 5-19s-83w, dr 2215 ft.

CONVERSE COUNTY—E. B. Jones' State 1, sw sw sw 16-32n-69w, dr 2350 ft.

NIOBRARA COUNTY—Lewis Gokel's 1, sw ne 31-34n-62w, dr 678 ft.

WASHAKIE COUNTY—Wyoming O & R Co.'s Frison 1, nw sw nw 14-48n-97w, dr 1671 ft.

Catalogs...Bulletins

Rotary Blower Bulletin

Roots-Connersville Blower Corporation, Connersville, Indiana, has issued a bulletin, No. 22-B12, covering the application of their positive blowers in foundry cupola service. Included in the print is a discussion of the structural features of the blowers and a table giving melting capacities, speeds and horsepower.

Compressed Air After-Cooler

Sullivan Machinery Company, Michigan City, Indiana, announces a new bulletin (No. 88-W) describing compressed air after-coolers. Features stressed in the leaflet are the multipass design which insures maximum cooling efficiency from the water available, the use of a built-in separator and provisions for quick cleaning of the cooling tubes.

Baroco Drilling Clay

Baroco, an economical salt water-resisting drilling clay, and Fibrotex, a very effective material for preventing or regaining lost circulation in drilling wells, are illustrated and described in two new bulletins just published by Baroid Sales Company. Copies may be obtained from the offices of the company at Los Angeles, Houston and Tulsa.

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NEW PRODUCTS FOR THE FIELD
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BELT VULCANIZER
B. F. Goodrich Company

The B. F. Goodrich Company has announced the "No. 28 Aluminum One-Man Vulcanizer," for vulcanizing splices in transmission or conveyor belting up to 28 inches wide. Through use of aluminum, cost of this unit has been reduced and its weight lowered to under 300 pounds. Either of the two platens can be handled by one man or the entire vulcanizer lifted by two men.

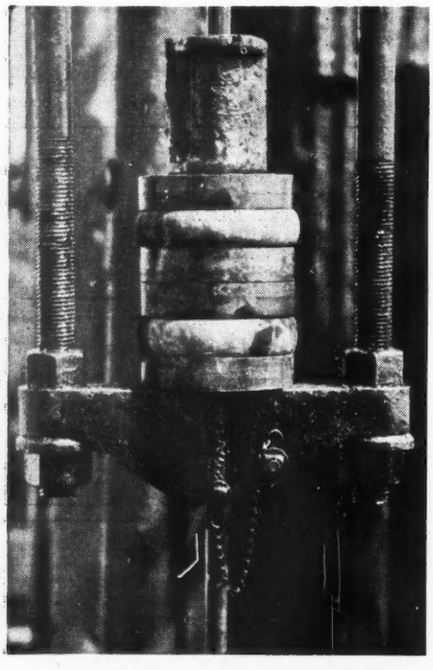
The vulcanizer is said to offer the added advantage of being able to vulcanize narrow transmission belts up to 10-inch, 6-ply inclusive in one heat. Unit is available in 110 or 220 volts A.C. and D.C., 110 and 220 volts A.C., 110 or 220 volts A.C.-D.C. The D.C. types may also be used for A.C. of equal voltage by changing the plug-in connections on the side of the vulcanizer.

SUCKER ROD SHOCK ABSORBER
The Engineering Company

The Engineering Company, Tulsa, has announced the "Teco Sucker Rod Shock Absorber," which is manufactured under patent No. 2,038,527. It is a rubber cushion inserted between the polished-rod clamp and beam-hanger carrier-bar of a pumping well, so that the sucker rods "float" on rubber. According to the manufacturer, dynamometer tests have proved these shock absorbers reduce the peak polished-rod load, or sucker rod stress, between 10 and 15 percent on the average well. Polished-rod horsepower, or energy input to sucker rods per barrel of fluid lifted, is reduced from 10 to 20 percent, it is claimed.

Other advantages claimed are a reduction in difference between maximum and minimum loads which is the fatigue producing load, increased lift efficiency, insulation of sucker rods from vibrations originating in surface equipment, gears, beam-hanger linkage, and from gas engine impulses.

The shock absorbers are furnished in three sizes having end-plate diameters of 6 inches, 8 inches and 10 inches to fit various sizes of beam hangers, and for various operating conditions. Complete engineering data on the device will be furnished by the manufacturer on request.



Teco Sucker Rod Shock Absorber

BEARING
SKF Industries, Inc.

SKF Industries, Inc., Philadelphia, has announced an addition to its line of products, the newest item being the "Grip-lock" bearing. The grip-lock principle offers the advantage of quick, simple application of the bearing without tools of any kind and insures the user of a bearing positively locked to the shaft, the manufacturer claims.

Essentially, the bearing is the conventional self-aligning extended inner race bearing with an eccentric groove machined in the bore of the inner race. Fitted in the eccentric groove is a piece of spring steel known as the "Grip-lock" shoe. When the shoe is in the deepest part of the eccentric groove the bearing may be readily slipped on the shaft. Then, by holding the inner race of the bearing while the shaft turns in the direction of operation, the knurling at the ends of the grip-lock shoe grips the shaft, causing the shoe to wedge in the shallow part of the eccentric groove, thus locking the bearing on the shaft.

Gas Weight Chart

Gas Power-Incorporated, Houston, Texas, has developed a chart that shows the weight of a column of gas in a well. The chart was compiled by the company's engineers from data that has been checked and found correct. The chart will be mailed to any interested party who requests it. It takes into consideration depth, specific gravity of the gas, and surface (casing) pressure as three known factors. The final reading on the scale is the increase in pressure in pounds per square inch due to the weight of the column of gas, and when this is added to the surface pressure, the answer is the total pressure at the depth and specific gravity of the gas in question.

This Week with the Industry's EQUIPMENT SUPPLIERS

Reed Roller Bit Declares Dividend

Reed Roller Bit Company for the June quarter has declared dividends of 20 cents a share regular and 10 cents a share extra on the new stock. The disbursements are payable June 30 to stockholders of record June 19. This new stock was issued recently through a split-up of the old stock on the basis of three shares of the new for each share of the old.

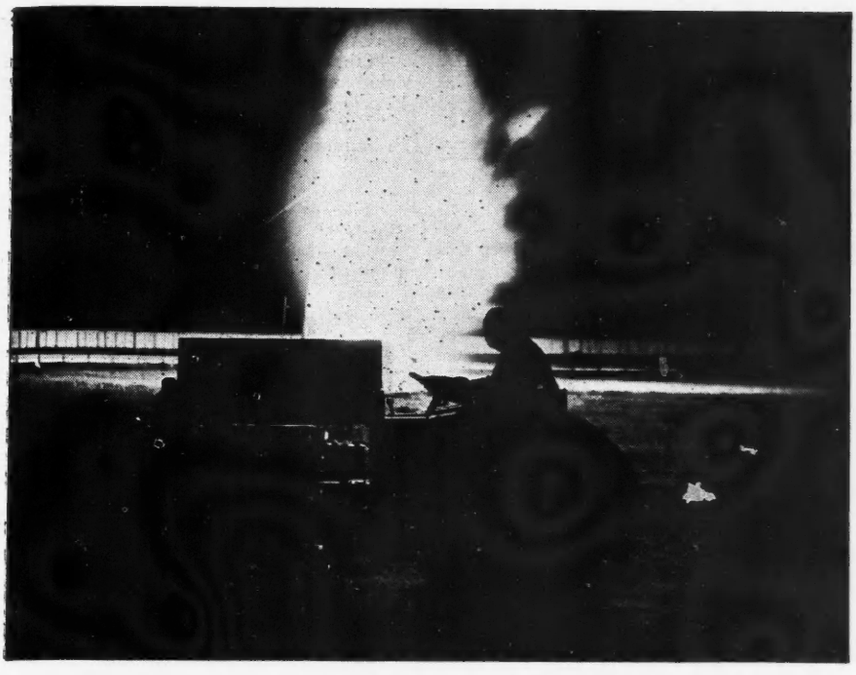
Robins Elected Head of Hewitt Rubber Company

At the annual organization meeting of the board of directors of Hewitt Rubber Corporation, Thomas Robins, Jr., was elected president, F. G. Cooban, vice president, E. K. Twombly, vice president and treasurer, and J. H. Hayden, secretary.

Thomas Robins, Jr., entered Princeton in 1915, left in 1917 to enlist as a "gob" in the navy, was promoted to command of a division of submarine chasers, and saw active duty overseas. He was awarded the Navy Cross, and resigned in 1919 as a lieutenant. Starting in the employ of the Robins Conveying Belt Company, he successively became advertising manager and assistant sales manager. He was assistant to the president after 1926, and was elected vice president and general manager in 1931.

Cooban earned his engineering degree at the Armour Institute of Technology and took graduate work in

THOMAS ROBINS, JR.



Picture taken second night of Kinley fire fighting demonstration at Ninth International Petroleum Exposition. This Allis-Chalmers tractor used to clean up around the burning well was loaned by Fred E. Cooper and was driven by A. G. Bailey, sales manager for Fred E. Cooper.

chemistry at the University of Illinois.

Twombly is a graduate of Syracuse University and his entire business life has been devoted to the rubber industry. He has been with the Hewitt Rubber Corporation since 1916.

Hayden has been in the sales division of the Hewitt Rubber Corporation since 1917. From 1924 to 1927 he served as manager of the metropolitan New York area.

Paul Cavins to Tour Rocky Mountains

Paul Cavins, president of Cavins Company, Long Beach, California, and who has just returned from a tour of the Gulf Coast and Mid-Continent fields, will spend the next three weeks in the Rocky Mountain fields. While in the Gulf Coast and Mid-Continent, Cavins attended both the International Petroleum Exposition and the Oil Equipment and Engineering Exposition.

Baker Oil Tools House Warming June 20

Baker Oil Tools, Inc., is inviting the entire oil industry to be its guests Saturday, June 20, 2:30 to 5:30 p. m., at a house warming which will officially open the new Houston plant at 6023 Navigation Boulevard. A 7-piece orchestra, including musical specialty artists, will furnish entertainment, and barbecue will be served. Included as hosts of the party will be T. Sutter, vice president and general manager; S. E. Rees, credit manager; C. E. Whitney, sales manager; and C. E. Burt, chief engineer; all of Huntington Park, California; W. A. "Red" Davis, district manager, Houston; Walter Routt, Dallas and Houston sales; H. Bishop, Houston sales; John Grubb, North Louisiana sale; Gordon Key, South Louisiana sales; and Ray Kail, Southwest Texas sales. R. C. Baker, president, who has spent much time in Houston recently in connection with construction of the plant, will be unable to attend the opening, having of necessity returned to California headquarters.

The new Baker plant in Houston, originally planned as a 65-foot x 100-foot building, was increased before construction started to 65 feet x 200 feet, and decision was made prior to completion of this unit to add still more to the size within the near future. The company purchased approximately 5½ acres of land for the growth of the plant in the future. Fabrication of considerable Baker equipment will begin here immediately, and additional machinery is being moved in for further manufacturing facilities. The building is the monitor type, steel with a brick front.

T. N. St. Hill Is on Another Long Tour

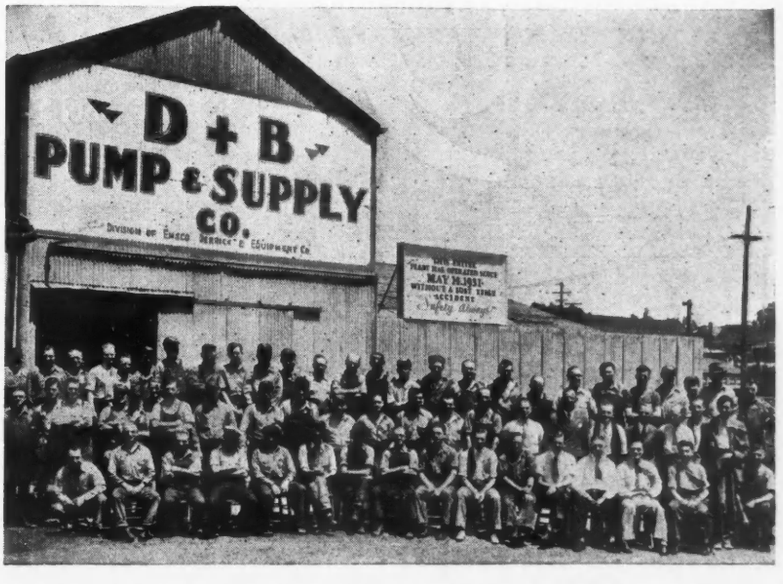
T. N. St. Hill, vice president of Petroleum Rectifying Company of California, who recently returned to his offices in Los Angeles from an extensive tour through the Gulf Coast, Mid-Continent and Central States, is making another trip to various points throughout Texas where he will inspect a number of Petreco Electromatic De-Salting Plants installed during the past year. While away, St. Hill will spend several days in El Paso and Houston, Texas; and may decide to inspect other similar plants operating at points as far north as Wisconsin. He expects to return to Los Angeles about the end of June.

Five Years Without Lost Time Accident

The D+B Division of Emsco Derrick & Equipment Company, Los Angeles, on May 14 celebrated its fifth consecutive year without a lost-time accident. This period represented a total of 720,000 working hours. Credit for this remarkable record is given to the fine work done by the shop safety committee, as well as to the cooperation of the employes as a group.

During the meeting held at the plant in honor of the occasion, J. S. A. Smith, secretary and treasurer of the company, complimented those responsible for the exceptional safety record and urged all employes to carry on the good work and remain permanently safety minded.

A. F. MacDonald of New Amsterdam Casualty Company, also addressed the gathering. During the course of his remarks, MacDonald stated that in his 15 years of safety engineering work he had never before encountered a factory group so safety conscious in every detail of careful action as well as so particular in regard to shop cleanliness.



Employees of D + B Division of Emsco Derrick & Equipment Company celebrating their fifth consecutive year without a lost-time accident.

Squeaks from the Bull Wheel

Some Tick

J. Lewis Foster of Hill and Foster Company, Wichita Falls, tells of an actual happening in front of a wildcat doghouse near Cotton Valley. The characters were himself, Jack Lynch, superintendent, and Jake, the driller.

Jake: When the wind is right these mosquitoes are terrible.

Foster: (Exhibiting bite after shifting wrist watch) One bit me through my wrist watch.

Lynch: Maybe it was a tick.

Jake: What Kind?

Lynch: Out of the watch.

Scotch Saving

A Scotsman said to his son: "Now, laddie, start saving the pennies in this yellow box. When you have got three, bring them to me and I will give you a silver three-penny bit, and you can put that in this blue box. When you get four threepenny-bits give them to me and I will give you a shilling which you can put in the big red money-box under the stairs."

Seventeen years later the youth discovered by accident that the red box was the gas meter.

Biblical

"I say, Joe, your girl looked quite tempting in that sort of Biblical gown she was wearing last night."

"What do you mean, Biblical gown?"

"Oh, you know. Sort of lo and behold!"

Unfinished Story

Among the mourners at a negro funeral in Georgia was a ventriloquist whose peculiar power of "throwing" his voice was unknown to the others. The details of all that happened will never be known, due to lack of eye witnesses. One of the mourners gave this somewhat sketchy version of what he saw and heard:

"Just when day wuz startin' to lower Joe in his grave, he says 'Lemme down easy, boys.' Lawzee, dey just draps poor Joe in his grave an' runs."

"Did someone else finish the burial?" a bystander asked.

"Man, how wuz I to know? I nevah even stopped to look back."

Probably Right

A none-too-well-prepared applicant for a civil service appointment found the following question on his examination paper: "How near is the moon to the earth?"

He replied: "Not near enough to bother me in my work, if I get this job."

All in What You Are Used to

A widow visited a spiritualistic medium who satisfactorily produced the deceased husband for a little chinfest.

"Dear John," the widow questioned eagerly, "are you happy now?"

"I am very happy," the spook assured her.

"Happier than you were on earth with me?" the widow continued.

"Yes," John asserted, "I am happier now."

"Oh, do tell me, John," the widow cried rapturously, "what is it like in heaven?"

"Heaven!" the spook snapped, "I ain't in heaven."

Stag

"I went to a stag party last night, dearie."

"I thought that's where you had been. I heard you staggering in."

Peaceful Family

"It's being rumored around that you and your husband are not getting along very well together."

"Nonsense. We did have some words and I shot him, but that's as far as it ever went."

Pound of Flesh

"I'm crazy about your wife, and if you'll let me have her I'll pay you her weight in gold."

"Let me have a few days first."

"To think it over?"

"No, to fatten her up."

That's Different

Two aristocratic looking gentlemen were discussing their family affairs one day. One was worried about the conduct of his son, saying: "I don't know what to do with him. He went out with a girl about a month ago and caught trench mouth from her."

"That's nothing. Likely to happen to any young man," said the other.

"But it is something. He gave it to our hired girl—and then I got it and gave it to my wife!"

"Say! You'd better do something about him. Good lord, maybe I've got it now!"

Some Draft

He: Where did you learn to kiss dear?

She: Dragging heavy malted milk up a straw. Why?

Alack Alas

College Student (wire to dad)—No money. No fun. Your son.

Dad (wires back)—How sad. Too bad. Your dad.

Couldn't Guess

Boss—"You should have been here at nine."

Steno—"Why, what happened?"

Worth It

Mr. Williams hired Sambo to paint his shed for $2.50. Reappearing on the scene he found Sambo lying in the shade enjoying himself while another negro was painting.

"How is this, Sambo?" asked Mr. Williams. "I thought I hired you for that job."

"Yes, suh, Mr. Williams, Ah knows you did, but Ah done sublet the contract for $3."

"But," remonstrated Mr. Williams, "I pay you only $2.50, so you are losing money on this job."

"Yes suh, yes suh, Ah knows Ah is," was the reply. "But it's worth somethin' to be boss."

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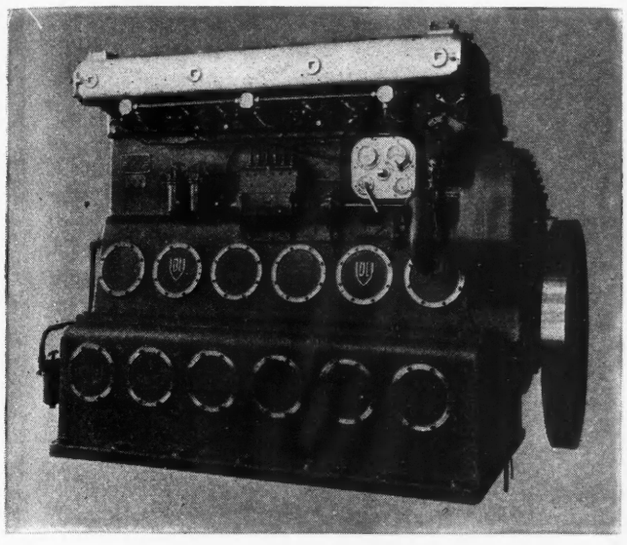

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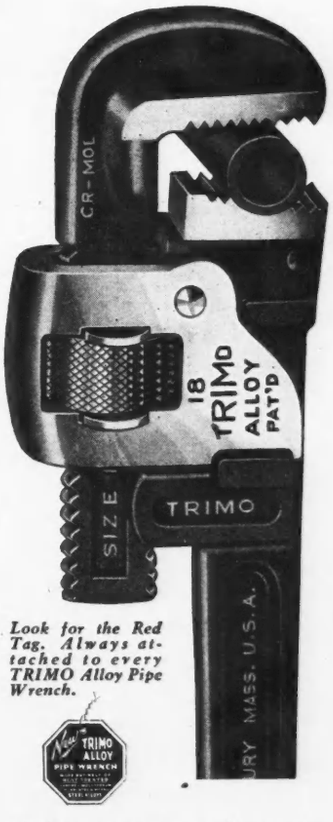

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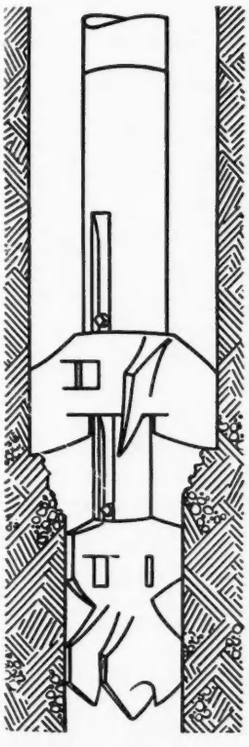

Action of the Globe Re-Drill Bit with diamond-point pilot bit reaming out rat hole. Note how the formation breaks away ahead of the cutting edge, thus greatly increasing drilling speed. The long reaming edges go THROUGH rather than around any irregularities, insuring full-gauge, thoroughly rounded hole.

The Globe Re-Drill Bit with a diamond-point pilot bit is just the thing for reaming out to full gauge the rat hole made with a core barrel or small bit. The secret of its speed and efficiency is shown in the diagram at left. The four heavy, sharp blades of the re-drill cutter form an X and are set at the most effective cutting angle. In addition, the lower cutting edges slant *upward*, so that the point of each blade attacks the formation first, cutting a V-shaped path. As the bit is fed downward, the formation between the points of the blades and the wall of the rat hole breaks away ahead of the angular cutting edges, thus reducing the actual cutting work demanded of the re-drill cutters and greatly prolonging their service life.

Both the re-drill cutter and the bit are held in place on the heavy, one-piece shank by our patented lock, and are changed without using tongs or bit breaker and without detaching the shank from the drill collar. All of the weight of drilling is taken by the shank shoulder above each cutter. There are no threads to warp when building up the cutters or gall under the loads of hard drilling work.

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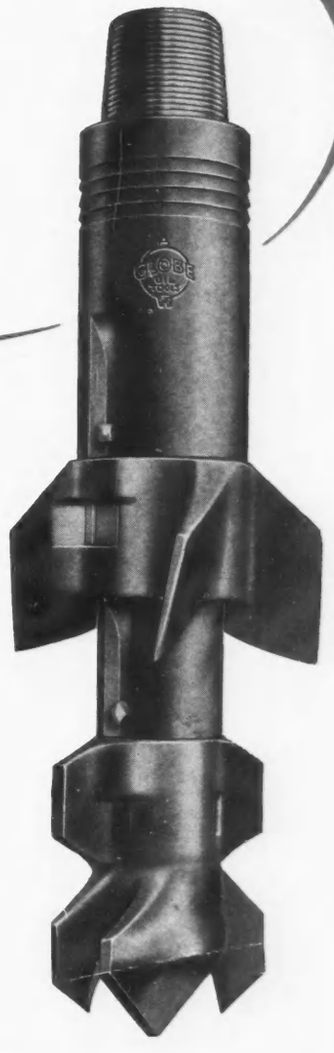

Globe Type D Re-Drill Bit, with diamond point pilot bit. This combination economically cuts not only any formation successfully drilled with a drag-type blade, but, due to the breaking away action described above, many harder formations as well. The diamond-point bit may be replaced with a Globe M-5 bit to provide an efficient "tandem" type bit for drilling.

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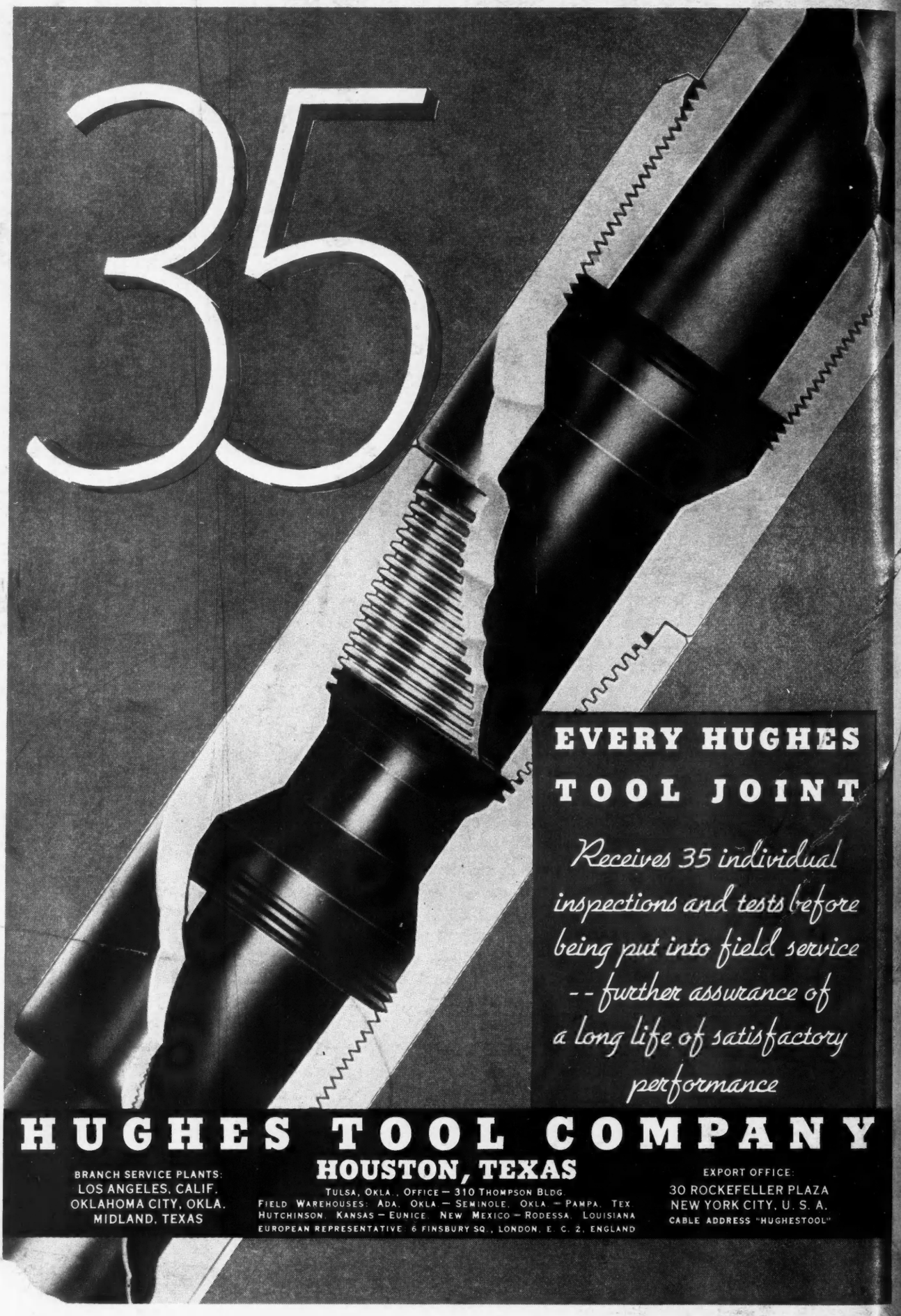

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